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SOME NEW DRUGS AND REMEDIES*

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If even half the statements were true which have been made concerning new drugs by their inventors and manufacturers during the last decade or so then it would scarcely be too much to say that by now all the problems of medicine would have been solved. Not only would there be no need for any further research, but the practice of medicine would have been reduced to such simplicity that, beyond a knowledge of diagnosis, all we should now require would be a fountain-pen and the ability to construct and use a card index. It is a curious phenomenon, yet one which has been attested again and again by medical history, that at the commencement of its career a new drug often meets with a striking success; all too often, however, after a time, the drug in question is found to be useless, harmful, or at best of but limited application. It was Trousseau who once said to his students, "Make haste, gentlemen, to use a new drug while it still has power to cure!"

This is not to say, of course, that there have been no real advances in drug therapy during, say, the last twenty-five years. To mention no other instances, the discovery of insulin, of liver and stomach preparations in the treatment of pernicious and some other anaemias, and the promising developments of serum, vaccine, and glandular therapy would dispel any undue pessimism. Then, too, many new synthetic drugs of proved usefulness have been added during that period to our armamentarium by the research and ingenuity of chemical and other workers. Yet, considering the spate of new drugs which has in ever-increasing volume poured forth from the laboratories of the world, the number proved to be of real and permanent value has not been nearly so large as might reasonably have been expected.

I propose to deal with just a few groups of remedies which present problems of practical importance to the practitioner in his daily work. More especially I shall deal with those classes of substances about which there is still some controversy, and I shall try to tell you what is at present being thought about them. Therefore I shall have but little to say about proved and universally accepted new remedies; not because they are undeserving of lengthy consideration, but simply because good wine needs no bush. I shall include certain drugs and remedies which, though known for long, have recently been presented to us under new names, with new claims, by certain proprietary houses. And this brings me to my first group, which I shall term:

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Pseudo-new Remedies

Among pseudo-new remedies may be mentioned the class in which a well-known pharmacopoeial drug—for example, acetylsalicylic acid—is rebaptized and offered to the profession, often also to the public, at an increased price as a new drug of surpassing excellence. A drug by any other name than the official one is for some mysterious reason thought to act twice as well. To make it twice, or thrice, as expensive is good psychology, because most of us associate together the adjectives "cheap" and "nasty," and are prone to conclude that what is dear must necessarily be good. There is, too, as a general rule, a claim to unheard-of purity or safety. As regards the claim of purity, to take a concrete case—namely, that of aspirin—the *Pharmacopoeia* enjoins a purity of not less than 99.5 per cent., so that there is only the half per cent. for the manufacturer to play with. Even if he has managed to narrow this to a still smaller fraction is it worth while to pay three or four times as much for a degree of purity considered unnecessary by the *Pharmacopoeia*? If, on the other hand, the manufacturer advertises that his is the "safe" brand of so-and-so he creates in our impressionable and conscientious minds the fear that we may be guilty of manslaughter if we order the pharmacopoeial article. "Safe" in this connexion might mean one of two things. It might mean that a drug whose therapeutic properties are dependent upon its dangerous character has been rendered innocuous. If so, then the manufacturer has only succeeded in emasculating it. But if what is meant is that the pharmacopoeial article is dangerous, then an unjust aspersion is being cast upon the very worthy compilers of the 1932 *Pharmacopoeia*, who, I can assure you, had no ancestors among the Borgias.

Another group of drugs, the glycerophosphates, has been known for some time, but as many elegant preparations of them are still being put on the market they may, I think, rightly be included in this group of pseudo-new remedies. The best pharmacologists have long been in agreement that, in so far as the utilization of phosphorus is concerned, these drugs are quite inert and have no therapeutic usefulness. They are rapidly broken up in the body and excreted as inorganic salts, while the glycerin undergoes combustion. They may have a certain value in respect of the iron, calcium, strychnine, or other drug which is combined with the glycerophosphoric acid, but this is a very extravagant and uneconomical way of prescribing iron, calcium, etc. In the light of modern knowledge the prescription of glycerophosphates is now seen to be irrational and unscientific.

The hypophosphites constitute a still older group of remedies. As in the case of the glycerophosphates, there is no justification for giving hypophosphites for their phosphorus content, since they are almost entirely eliminated and little or no assimilation of the phosphorus occurs. It has been calculated that half a glass of milk contains more available phosphorus than 45 grains of the hypophosphites. They have been deleted from the 1932 edition of the *British Pharmacopoeia*.

Lastly among pseudo-new remedies we may mention those elegant and expensive preparations in which well-known drugs are combined, put up under a registered name, and claimed to be more efficacious than any substitute, even though made with the same ingredients. There is no doubt about their artistic appearance, but unfortunately the Philistine Insurance Act takes no account of Art ; its criterion is whether a drug or remedy can be regarded as reasonably necessary for adequate treatment. Moreover, many of the best of these formulae are contained in the *British Pharmaceutical Codex*, and can be made up by the chemist round the corner at quite a reasonable price.

Erstwhile Proprietary Preparations

There are certain valuable modern drugs which, starting their career as proprietary articles, are now available under both trade names and their ordinary chemical designations. Considering more especially drugs of a definite chemical composition, as, for example, phenobarbitone and phenobarbitone sodium, which are now included in the *British Pharmacopoeia*, it is reasonable to suppose that drugs ordered under these names should be quite as efficacious as when ordered under their original proprietary names. Yet because the former are much cheaper than the latter some hesitate to write the pharmacopoeial names. On this point reference might be made to a paper by Dr. Handley in the *Journal of Mental Science* for July, 1934. He tested a proprietary brand against the non-proprietary official soluble phenobarbitone. To a series of 200 epileptic patients he gave the proprietary brand, and to a control series of 200 like patients he gave the pharmacopoeial equivalent. The doses were the same in each series, and he continued the experiment for four months. In no case did he find that the non-proprietary brand produced results less satisfactory than the proprietary article. The economical gain was, however, considerable, representing as it did a difference of some seven shillings an ounce in favour of the non-proprietary drug.

Colloidal Preparations

In view of the claims made by interested parties many practitioners must have wondered whether the presentation of drugs in the form of colloidal solutions endows them with mysterious properties which are not present when they are given as ordinary solutions. The answer is No, though in some cases, not perhaps very many, there are certain advantages. The subject is rather a difficult one, and the exact evaluation of the colloidal preparations from a therapeutic standpoint is not easy for a variety of reasons. The chief difficulty lies in the fact that, in order to render these preparations stable, various " protectives " of an organic nature have to be added, such as gelatin, glutamine, glucose, peptone, etc. These protective substances often have a definite action of their own, especially when injected, and in some of the market preparations the active ingredient would appear to be not in colloidal solution at all, but in chemical combination with a body of colloid nature. Another difficulty is that very little is at present known of the fate of colloidal solutions in the body, but it seems probable that, if given by the mouth, they are altered by the digestive fluids, and so any supposed advantage will be lost. If injected, we have to discount the effect of the protective colloid, which, being commonly of a protein nature, may exert an action similar to that of the substances used in non-specific protein therapy. Nor must we forget that, as the late Sir William Bayliss pointed out, various membranes of the body are impermeable by substances in the colloid state although large particles can be taken up by many cells. It is quite incorrect to say, as has been said, that drugs must be colloidal before they can exert their effects.

Besides all this, it has been shown that some of the preparations on the market cannot be regarded as true colloids, and that in others the active principle is present in such minute quantity that it is inconceivable that it can exert any appreciable effect. A well-known colloidal preparation of calcium, for example, was examined by the Council on Pharmacy and Chemistry of the American Medical Association and, in the dose recommended by the makers, was found to contain about as much calcium as that in a quarter to half a teaspoonful of milk! Moreover, owing to the nature of the substance with which the calcium was combined, there was considerable doubt whether even this minute quantity of the metal would be as well absorbed as when given in the form of milk. Let me say here that for reliable information on many well-advertised new drugs and remedies you will find *New and Non-Official Remedies*, published in Chicago by the American Medical Association, an exceedingly useful book.

It would appear that, generally speaking, the idea must be abandoned that drugs administered in the colloidal state have a more powerful action than when given in ordinary solution. With perhaps one or two exceptions the reverse is the case, and any therapeutic advantage of colloidals must be attributed to the fact that they have a slow, gradual effect. This is brought about, to quote Bayliss again, by " the very slow and prolonged action of continuous minute doses of the ionized form " into which the colloidal form changes. If, therefore, this particular action is required, the injection or local application of a true colloidal solution may be of value as forming a reservoir of the drug for slow and continuous utilization. This would explain the undoubted usefulness in certain circumstances of the colloidal silver preparations. Colloidal kaolin, again, is stated to have stronger absorptive properties in the colloidal state than in the form of gross particles, owing to the larger total surface area of the colloidal particles.

To sum up the matter: I think it would be fair to say, in the light of our present knowledge, that while there are no mysterious properties in colloidal drugs, and while their field of usefulness is strictly limited, circumstances do sometimes occur in which they have an advantage over drugs in the ordinary forms. For oral administration, however, they have no advantages over ordinary solutions, and there is the very real disadvantage of greatly increased cost.

Valueless Endocrine Preparations

The endocrine preparations which have been and are being offered to the physician may conveniently be divided into three classes:

1. Those concerning which there is no reliable evidence of usefulness ;

2. Those whose efficacy has been proved " beyond a peradventure " ;

3. Those concerning which opinion is at present in a fluid state.

As regards the first class, tablets and solutions have been prepared from almost every tissue and organ of the animal body, regardless of whether those tissues and organs could reasonably be supposed to produce an internal secretion or not. Thus we have extracts of tonsil, kidney, prostate, spleen, heart, brain, mammary gland, and so on. I know of no authentic evidence that such products are of the slightest use, with the exceptions that certain brain extracts seem to have some haemostatic effect, and a German author claims to have isolated a "heart hormone," which is being tried out in cases of angina pectoris. Doubtless, from time to time, either by the chance co-operation of the *vis medicatrix naturae* or through the influence of suggestion, apparent successes have been reported. It is surprising what brilliant results can follow when a new drug or preparation is swallowed, along with its advertisement. Yet, in so far as real scientific evidence is concerned, there is at present none, and such therapy rests on no sounder theory than that of the savage who eats his enemy's heart to absorb his courage. Equally unscientific are those "shotgun" preparations of various combinations of endocrines which are so largely advertised, especially as nearly all of them are intended for oral administration. That they have any action at all is due to the fact that one of the ingredients of the cartridge is usually thyroid extract, which is one of the very few preparations of endocrine nature having any action when given by the mouth. These polyglandular preparations are also irrational when considered from another point of view. It would appear that true polyglandular syndromes are excessively rare, and Rowe (quoted by Cameron) states that in a series of over 5,000 cases he "has seen but two or three in which there has been apparently a coexistent primary disturbance in more than one endocrine gland."

Also in this class come those pancreatic and guanidine-like preparations which have been and still are advertised as being efficacious in diabetes when given by the mouth. Such a statement ought not to be made at this time of day, for again and again careful tests with controls have been made which show that it is quite useless to prescribe such products. We all wish we could relieve our diabetics from the inconvenience of the needle-prick, but at present there is no other effective method of treatment.

Endocrine Preparations of Proved Worth

This group includes the thyroid, parathyroid, posterior pituitary, and suprarenal gland preparations, and insulin, and we ought, perhaps, to include the liver and stomach preparations. Except in the case of the thyroid, liver, and stomach preparations there is little or no evidence that any definite systemic effect is produced by oral administration, though there is reason to believe that the nasal mucous membrane is able to absorb a certain amount of the posterior pituitary principle in snuff or in solution. I ought also to mention, in passing, the recent and extremely interesting researches on the action of extracts derived from the cortex of the suprarenal glands in Addison's disease. Adrenaline, of course, is derived from the medulla of the gland. A certain amount of success has already been attained, and in the case of these cortical extracts there is definite proof that they are effective by the mouth as well as by injection, though the latter method is the more powerful.

The third group, of endocrine preparations about which opinion is still uncertain, we must consider in more detail because, in respect of some of its members, and especially the sex hormones, practical everyday problems arise, and a brief statement of the present position of our knowledge may be of advantage.

Endocrine Preparations of Indefinite Value

We may dismiss at once the testicular extracts and preparations as being at present of no definite therapeutic importance. A good deal of work is being done upon them, but much more is required before a therapeutic rationale can be worked out. We must wait and see whether they prove to be of any real value in human treatment. But after a long period of confusion and conflicting opinion, which is even yet not quite resolved, some light is at last being thrown upon the possibilities of the ovarian principles and those of the corpus luteum.

Recent work on the endocrine machinery of the menstrual cycle has shown that three groups of hormones are involved. These are the so-called gonadotropic principles of the anterior pituitary (prolan A and prolan B), the follicular ovarian hormones, and the hormone of the corpus luteum. Prolan A stimulates follicle formation, while prolan B stimulates the formation of the corpus luteum hormone. Now as regards the ovarian follicular and the corpus luteum hormones, each has an important part to play at definite periods of the menstrual cycle. The follicular hormone, in the first half of the menstrual cycle, causes proliferation of the endometrium, while the transformation into the secretion phase in the second half is caused by the hormone manufactured by the yellow substance of the corpus luteum. Both are essential, and thus we can already deduce from this recent work that it is useless to attempt to treat amenorrhoea, as was so often attempted in the past, merely by giving the ovarian follicular principle alone.

Another important result of recent work has been to show that the older forms of ovarian substance, ovarian residue and corpus luteum, were inert, or almost inert, and what little active principle they did contain was rendered useless, or nearly useless, by the digestive juices. Up to quite recently the endocrine treatment of ovarian disorders was blind, groping, and almost wholly ineffective owing mainly to two things: the want of a definite scientific standard by which the effectiveness of preparations could be assayed and measured, and the want of concentrated preparations of the chemical principles of the various ovarian hormones. Both these desiderata have now been attained.

Isolation of the Ovarian Endocrines

The possibility of a scientific endocrine therapy of ovarian disorders may be said to date from 1923, when Allen and Doisy invented a reliable method of standardization of the oestrogenic principles of the ovary. The original rat unit, which was the amount of material required to induce oestrus in an ovariectomized sexually mature rat of given weight, is now being supplanted by the international unit, which is defined as the activity contained in 0.0001 mg. of the chemically pure ovarian follicular hormone. The international unit is about one-third of the Allen-Doisy rat unit. Similarly for the corpus luteum hormone a rabbit unit is used.

Doisy in 1923–4 first obtained a very active extract from the fresh follicular liquor of hog's ovaries, the oestrogenic principle contained in this he named theelin. In 1929 he and others succeeded in isolating theelin in pure crystalline form from the urine of pregnant women, and later there was isolated another active oestrogenic principle, differing slightly from theelin in chemical composition, which goes by the name of theelol. Both these preparations are now obtainable commercially, under the original names as well as under other designations. A third oestrogenic principle, which is, roughly, a benzoate of hydrogenated theelin, has now also been produced.

There is still some confusion, unfortunately, as to nomenclature. The correct chemical designations are unwieldy, and the generic term "oestrin" is often applied indiscriminately to the various oestrogenic preparations representing the ovarian follicular hormone. But the term "oestrin" is also used for the chemical nucleus of the various principles. From the practical point of view one has to be content to order by the various trade names.

At present, so far as I am aware, few or none of the really effective modern commercial preparations are made from ovarian substance itself. Enormous doses of the ovarian principle are necessary to produce an effect, and to get these enormous doses in sufficient concentration material such as pregnancy urine or placenta has to be used, though there is as yet no conclusive chemical proof that oestrogenic substance from the sources named is absolutely identical with that obtained from follicular fluid. Indeed, it is only quite recently that Doisy (1935) has, for the first time, isolated a pure crystalline oestrogenic principle from the ovary itself. But it is the proved oestrogenic capacity of a preparation which really concerns us. The hormone of the corpus luteum has been isolated in pure crystalline form and has been termed "progestin," though now the name progesterone has been adopted. Preparations of it are available commercially under the name "progestin" and also under other names.

A further point of clinical importance which modern research has established is that, with a few exceptions, it is highly wasteful, if not useless, to give oestrogenic principles by the mouth. Kaufmann states that if oestrin (theelin) is given by the mouth only about one-thirtieth of the dose becomes effective. Even when given parenterally, endocrine treatment in the doses now shown to be necessary (as much as three and three-quarter million international units of oestrin may be required during a three-months course in some cases) is very expensive indeed.

The Results of Ovarian Therapy

What results are we justified in expecting from endocrine therapy in gynaecological disorders? None at all, if we persist in giving the old unstandardized tablets of ovarian or corpus luteum substance which are still on the market. There was some excuse for such preparations when concentrated, standardized forms were not available, but now they are only fit for a medical museum. But if we employ the modern standardized preparations in proper doses, and in a proper manner, we may indulge in a restrained optimism.

Kaufmann has been a pioneer in modern ovarian therapy, and it is of interest to study his results. He claims to have been, and I believe was, the first to prove that the whole menstrual cycle could be experimentally imitated in the case of a woman deprived of both ovaries. He did it by using enormous doses of both the ovarian and the corpus luteum hormones. This achievement may be regarded as a landmark, for it proved for the first time that substitution therapy, if conducted by a proper technique and by means of adequate doses, could be really effective. Starting from this point he used endocrine treatment in various other conditions, and his results may thus be summarized:

1. *In Primary Amenorrhoea: Arrested Development of the Uterus, etc.*

   Sometimes temporary improvement, but no permanent improvement in a single case.

2. *In Secondary Amenorrhoea of Endocrine Origin (Oestrin and Progestin).*

   Often very successful for the time being, but there is a tendency to relapse. Permanent results are, however, obtained in a proportion of the cases.

3. *In Oligomenorrhoea.*

   Treatment is often helpful.

4. *In the Menopausal Syndrome, or after Castration.*

   Often very successful. The follicular hormone (oestrin) only is necessary. Hormone therapy is here, in suitable cases, superior to any other form, though it must be remembered that such treatment is not necessary except in a minority of patients with menopausal trouble. Most are amenable to more ordinary measures.

5. *In Uterine Haemorrhage of Ovarian Origin.*

   The corpus luteum hormone (progestin or progesterone) only is used, and is very efficient.

British experience has, on the whole, confirmed Kaufmann's statements. Preparations of oestrin have been found to be especially useful also in the intense pruritus vulvae sometimes met with in castrated women or at the menopause, and Nabarro and Signy report very promising results in the treatment of vulvo-vaginitis in young children. In the latter case oestrin seems to be effective by mouth in much smaller doses than are required for other conditions.

Progestin has been found exceedingly useful in habitual miscarriage from no apparent cause—that is to say, where syphilis and organic causes can be excluded; prolan preparations are also found to be effective here. Spasmodic dysmenorrhoea and the excessive and irregular bleeding of young women have also been successfully treated by the modern corpus luteum or prolan preparations.

In spite of all this, one must stress the fact that the treatment of gynaecological disorders by hormone preparations is still in its infancy, and disappointments must on occasion be expected, even when dosage and technique are all that can be desired. Moreover, it must not be forgotten that only a minority of these cases really require endocrine treatment.

Vitamin Preparations

We used to be told, years ago, that five vitamins were essential for the maintenance of life—namely, A, B, C, D, and L.S.D.—the last being by far the most important! Of late, recent discoveries have so enlarged the number of vitamins known that we will soon have exhausted our own alphabet and may eventually have to float a loan from the Greeks. As a general rule, it may be said that, with the exception of cod-liver or halibut-liver oil, it is more physiological, and more economical, to buy our vitamins from the butcher, the greengrocer, and dairyman than from the chemist. Yet there is no doubt that in certain circumstances some of the highly concentrated vitamin preparations, especially those of A and D, are very helpful. Though a good mixed diet is not deficient in any of the vitamins, yet there are occasions when for some special purpose we wish to give larger quantities of one or other of these principles than are ordinarily contained in the diet. Moreover, owing to poverty or other causes, a good mixed diet may not easily be obtainable. It is worth remembering, however, that, even in the case of A and D, natural sources, such as the fish oils, may have an advantage over the artificially concentrated products. Even yet we do not know all there is to know about cod-liver oil, and recent researches suggest that there is some subtle difference between the vitamins contained in this and other fish oils and the artificial preparations. Nevertheless, when all is said and done, occasions do arise when these latter may be extremely useful.

I have left untouched vast tracts of my subject, but that is inevitable. If I have been able to clear up even a few points which may have been troubling the ordinary practitioner of medicine I am well content.

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ERYTHROCYANOSIS

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The condition of erythrocyanosis with which this paper is concerned figures in Continental literature under the title of "erythrocyanosis crurum puellarum," a title made still more cumbersome by the addition of the word "frigidum" in some writings. French surgeons and dermatologists describe it as "erythrocyanosis sus-malléolaire." The condition is, as these names imply, one of reddish-blue discoloration of the skin seen in the lower half of the leg in girls and young women, and especially evident in the region above the malleoli. In this respect it differs from acrocyanosis, "acro-asphyxie," which affects the most peripheral parts of the circulation—the digits, the ears, and the nose. Erythrocyanosis may affect the skin over the triceps in the arm, but seldom leads to any serious consequences in this situation. Examples of the disease in the male are very rare.

General Features

In its minor degrees the lesion in the legs is very common and trivial, but it may develop in some cases into a serious and even crippling disability. An advanced case shows the following features. The lower half of the leg, particularly on its posterior surface, is of a purplish hue, which may be uniform or marked by scattered plaques of a deeper colour. The colour is blanched by pressure, but when the pressure is released the area fills up quickly with dark blood from all sides in a way which Krogh has graphically likened to a subcutaneous lake of ink. The discoloured area is cold to the touch. The circumference of the limb is much increased by a firm, elastic infiltration of the subcutaneous tissue. This may reach very considerable dimensions, and may take the form of a thick and prominent cuff of tissue most evident just above the malleoli and shading off higher up the leg. It produces a clumsy and evident deformity. The overlying skin is characteristic; it is stippled with small reddish points, in the centre of which is a minute keratinized focus. These are the hair follicles, enlarged and pigmented; the hair is usually absent, the "keratose pilaire" of French authors.

From time to time fairly large and very distinct indurated nodules appear in the subcutaneous tissue. When fully developed they are circular plaques 1 to 2 cm. in diameter, and are painful and very tender. On inspection the overlying skin appears a little tense and reddened, and on palpation a definite discrete induration is found, which spreads deeply into the subcutaneous tissue. Several patients have told us that they can forecast their appearance by a severe itching long before the nodules are apparent. These nodules undergo a slow resolution which at the best occupies several weeks. They often leave evidence of subcutaneous scarring, and in one of our patients, a middle-aged woman who had suffered for many years, there was a large area of thin, fibrous skin in the lower half of the posterior aspect of each leg. She stated confidently that at no time had there been any ulceration. On the other hand, in a number of cases a nodule here and there enlarges, becomes acutely inflamed, and finally bursts, leaving a small circular ulcer in the base of which is a tough, adherent slough. These ulcers are very slow to heal and often last until the beginning of summer. In the more severe cases sensations of weight and coldness in the leg, intolerable itching, and burning pain, together with the appearance of ulcers, may render the patient quite unfit for any work.

The thin, spare leg appears immune to this disease. Persons suffering from the condition are of a stout and florid build with large limbs, in which the sturdy appearance is misleading and due to excessive fat. Their general appearance is that of rude health, and Mach,[1] who gives a very good description of the lesion, states that they excite no pity because they look so healthy.

Aetiology

A study of the very extensive literature of erythrocyanosis shows that authors have been concerned mainly with two different views in aetiology. According to some

the lesion is tuberculous, while others postulate some endocrine dysfunction. Sections of the nodules removed from cases of erythrocyanosis show giant cells which are not of a true tuberculous type, but which may easily be reported as such unless the observer has had special experience in this field. Some workers, realizing that proof of the presence of the tubercle bacillus itself is not forthcoming, assume a tuberculous toxin as the cause. Such reasoning is not capable of direct proof, and like "la tuberculose inflammatoire" of Poncet[2] must be regarded as purely speculative.

The school of endocrine dysfunction incriminates variously the thyroid, parathyroid, ovarian, and pituitary glands. The build of some of the patients suggests some degree of pituitary dysfunction, and this was notably so in two of our cases. These were submitted, however, to every known test of the pituitary function, the one by Professor Stopford and the other by Mr. G. F. Rowbotham, with entirely normal findings in each case.

We believe that a clue to the aetiology of this disorder may be obtained by a study of the vascular lesions in severe anterior poliomyelitis. These lesions are clinically identical with those in erythrocyanosis. The long-standing case of severe anterior poliomyelitis presents the same purplish discoloration in the same district with the same subcutaneous nodules running an exactly parallel course. In a former paper[3] evidence was adduced that the condition in anterior poliomyelitis was due to a deficient blood supply, more especially a deficient venous return, in a loose, unsupported fatty area far out in the peripheral circulation and exposed to cold. If, as we suggest, these lesions in severe anterior poliomyelitis are the same as those in erythrocyanosis, there can be no need to invoke either tuberculous or endocrine troubles as agents. It is clear that children of every conceivable diathesis are liable to suffer from anterior poliomyelitis, and if they are so unfortunate as to lose almost all muscular power in a leg they will eventually display vascular changes.

The factors which are constant in the two diseases erythrocyanosis and anterior poliomyelitis are defective venous return, excessive fat, and the action of cold, and it is in these purely local and physical factors that the explanation is to be sought. The relation to fat is very striking. Erythrocyanosis is found in women in the fat of the leg, and to a lesser extent in the fat around and above the knee, in the buttock, and occasionally in fat breasts. In the very few cases in which the lesion has been described in the male it has been seen in the buttock. The part played by exposure to cold is evident when one considers the very scanty clothing of the lower extremities which is the fashion to-day in women.

The views we have put forward agree closely with those of Klingmüller,[4] who regards the condition as a perniosis, and states that it is a purely vascular disturbance. We would venture from our experience to suggest that the same pathology may apply also to Bazin's disease.

The clinical features of the cases suggest that in consequence of deficient venous return, assisted by the constricting action of cold, a portion of the already subnormal tissue suffers an insult which may be due to starvation or to the escape of some noxious agent, the product of retarded circulation. The reaction of the tissues causes the nodule, which ultimately either gradually subsides with terminal fibrosis or, being unable to overcome the trouble, ends in a slough, which is finally cast off by ulceration. There is a striking resemblance on both clinical and histological grounds between this nodular lesion and that of fat necrosis. One of our patients, a very stout middle-aged woman, had a tumour removed from her left breast four years ago. This proved on section to be fat necrosis. She now has an exactly similar patch of fibrous induration in the fat of the right buttock and on the posterior aspect of the right calf.

Treatment and Results

At the beginning of this article we stated that the majority of these cases are trivial, and certainly no one would contemplate a major surgical operation for their treatment. We have, however, encountered ten cases in all in which the pain, disability, and total incapacity for work justified operative treatment. These were treated by bilateral lumbar cord ganglionectomy, and have up to the present given, without exception, most satisfactory results. The longest period which has elapsed since operation is four years and the shortest six months. The patients remain well without discoloration or other trouble, and are all fully restored to normal activity. It is to be noted that the clumsy and disfiguring cuff which forms above the malleolus is not entirely removed, but diminishes gradually until it is no more than a quarter of its former size.

Summary of Ten Cases

Case 1.—Female, aged 33. Fifteen years' history of trouble from pain, aching on exertion, and extreme coldness. Much supra-malleolar thickening. Unable to take exercise and live a normal life. Since operation on April 3rd, 1932, patient has remained entirely free from former trouble.

Case 2.—Female, aged 16. Severe chilblains and blue, swollen legs for four years. Unable to follow her work. Operation performed on April 16th, 1932. Patient remains very well and in regular employment.

Case 3.—Female, aged 17. Three years' history of cold, cyanosed legs, with severe chilblains; many scars of ulcers present. Since operation on June 16th, 1932, patient has remained entirely free from trouble.

Case 4.—Female, aged 18. Both legs deeply cyanotic and swollen for six years; could not walk far; chilblains, but no ulceration. Operation performed on November 12th, 1932. Patient remained well through two winters, but her present whereabouts are not known.

Case 5.—Female, aged 22. Ten years' history of almost total incapacity during the winter; chilblains, much pain and aching, huge supramalleolar swelling with great disability. Since operation on December 22nd, 1932, patient has been perfectly well; legs warm and of normal colour; some thickening remains.

Case 6.—Female, aged 24. Chilblains "all her life," which were present throughout the year. Considerable swelling about the ankles and a large persistent ulcer above the left medial malleolus. Operation performed on November 17th, 1932. The patient is very well; swelling much reduced; ulcer remains healed and colour normal.

Case 7.—Female, aged 17. Chilblains from childhood, lasting through the summer. Both legs blue, with many scars of old ulcers. Operation performed on February 25th, 1933. Both legs now normal; no swelling, and no return of chilblains or ulcers.

Case 8.—Female, aged 33. Fourteen years' history of cold, blue legs, with chilblains and many ulcers. Operation performed on June 17th, 1933. The patient is now very well. Since the operation she has not had a chilblain or an ulcer, and her legs are normal in shape and colour.

Case 9.—Female, aged 20. Six years' history of pain, itching, and ulceration of the legs, almost as bad in summer as in winter. Since operation on April 23rd, 1934, she has remained very well; both legs are shapely and of good colour, and she never has a chilblain or ulcer.

Case 10.—Female, aged 26. Three years' history of swelling above the ankles; ulcers formed in the winter and she was unable to work. Immediate result of operation, which was performed on September 21st, 1935, was satisfactory, and she is working through a severe winter without any trouble.

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THE PROBLEM OF SUICIDE*

BY

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There are but few human problems that do not, directly or indirectly, come within the purview of the general practitioner. The problem of self-destruction does not frequently present itself to him, but he never knows when he may have under his care some patient who may be potentially suicidal, whether that fact is recognized or not, or when he may be called to someone who has already attempted or completed the act. Popularly, suicide is usually regarded as rather a simple business. Somebody was in great trouble, severely depressed, or in acute pain. Life in such circumstances seemed unbearable and so the great refuge was sought.

A scientific study of the subject so often falls back upon barren statistical analyses, and medical literature ignores suicide as if it were scarcely entitled to recognition as a cause of death. One reads daily how this form of death is the logical consequence of circumstances, particularly ill-health, discouragement, financial loss, humiliation or shame, or unrequited love. It is assumed that the forces impelling suicide come wholly from without, whereas the paramount factors determining behaviour are the impulses from within. Few of us have been free from severe stress some time or other, but, though temporarily we may have seen life "as through a glass darkly," no impulse to end it took serious possession of us.

Yet there are many who voluntarily seek death on apparently slight provocation, even though they would seem to have much to live for. Evidently some strong inner compulsion overcomes the self-preservative instinct and leads them to this final goal. Psychologically, suicide is a complex act, but before its deeper mental factors are considered a survey of the many data concerning the subject will reveal much of interest.

Statistics of Suicide

It is generally assumed that the suicide rate is on the increase, and it has certainly shown an upward trend since 1920. Though during the great war period it was temporarily much diminished, there had been previous fluctuations which are by no means easy to explain. In England the rate is about 12.7 per 100,000 population.

It is interesting to note the great differences in the rate that are found in the various countries of the world. Austria, France, Switzerland, Czechoslovakia, and Japan have led the world in frequency of suicide. The high rate in Japan is partly due to the fact that the act is founded upon traditional custom and sanction. The United States, Sweden, Belgium, Denmark, and Australia hold a more middle position, while Norway, Holland, Spain, Portugal, Italy, England, and the Irish Free State are those with the lowest suicide mortality. In the Irish Free State it falls as low as 2.8 persons in every 100,000, while the figure for Spain is only 3.5. In Sweden, France, Denmark, and Spain suicide has decreased, while in all the other European countries the current tendency is decidedly upwards.

Contributory Causes

It is readily understandable that as age progresses and as we have less and less to look forward to, in this world at any rate, the tendency to self-destruction should become increasingly in evidence. More than half of all suicides occur among those of 45 years or over. Although in childhood suicide, as we might suppose, is not much of a social problem, it is more common than one might expect, and in German countries there have been astounding outbreaks of it among school children that seemed almost epidemic. From puberty onwards the rate rises steadily.

On the whole, suicide may be looked upon as a masculine type of reaction. On the average about three and a half times as many men as women kill themselves, though the ratio differs a good deal at various ages. In men the rate rises steadily throughout life, the upward incline being marked at the advanced age period. In women the rate increases very slightly up to the age of 30, and then remains stationary afterwards.

In most European countries the rate is distinctly higher in the city population than in rural districts, although in Great Britain there is relatively little difference. Naturally one would be inclined to associate urban life with stress and factors tending to instability, and especially so when we bear in mind that insanity has a higher incidence in towns as compared with the country. However, the more we investigate all these data relating to suicide the more we shall find it difficult to correlate cause and effect amidst the multiplicity of possible factors.

Economic Status and Religion

Statistics tend to show that those of good social status and business positions end their own lives as frequently as poor people. In general, persons with good means are engaged in intellectual vocations, and those thus employed seem to be more liable to suicide than the manual labourer. Yet the study of occupational groups shows that this is by no means of universal application. In this country it is striking that among those with the highest rates are physicians, dentists, barristers, and solicitors, and other professional workers such as teachers have low rates, while clergymen of certain denominations stand near the bottom of the list. In the labouring classes a high rate is most frequent among the poverty-stricken, so that suicide appears to be most prevalent at both extremes of the social scale.

We shall not be surprised that religion has a potent influence, and statistics demonstrate that those countries where the population is predominantly Catholic have a much lower suicide mortality than where Protestantism largely reigns. The Irish Free State has only a rate of 2.8 per 100,000, Spain 3.5, and Italy 9.6; while the Protestant nations show very much higher figures—for example, Germany 27.8, Denmark 17.6, and Sweden 15. During the last century the Jewish people had a very low suicide rate, but it is now higher than the Catholics and Protestants. This is partly accounted for by the fact that the financial and industrial depression following the war affected the Jews very seriously, and that later there was a recrudescence of anti-Semitism.

Historical Factors

It is of interest to note the attitude of ancient forms of civilization to suicide. Most authorities seem to be agreed that it was not considered a sin in the Greek or Roman State; that it was not infrequently extolled in old legends and in Homer; that it was opposed by such early philosophers as Plato and Pythagoras, but that the later Stoics rather actively encouraged it. There were many factors in those days which raised suicide to an extraordinary prominence. Life generally was held cheaply.

On the advent of Christianity quite the reverse attitude began to be adopted gradually, and by the fifth century suicide was definitely condemned by ecclesiastical law. As life became regarded as a divine gift, he who took his own life sinned against God. Through the severe denunciation of the Church there arose those barbarous and revolting customs which were carried out upon the corpse of the suicide. At any rate, whether due to the

*Abridgement of a lecture delivered to the East Kent Division of the British Medical Association at Margate.

injunctions of the Church or the fear of these indignities, the fact remains that throughout the Middle Ages suicide was almost unknown.

By the seventeenth century, however, a new philosophy of life had begun to modify opinion on the subject, and the individualism of that period again placed the right to die in the hands of the person himself. Hume and Voltaire in their eighteenth century writings warmly defended suicide, and Schopenhauer pointed out that obviously no one had a greater right over anything in the world than over his own person and life. In the nineteenth century and subsequently the subject received an increasing recognition from the scientific aspect. The Orthodox Church still condemns the practice, and the law regards it as a felonious crime, while the coroner's jury commonly returns a verdict of " suicide while of unsound mind " to avoid the infliction of any penalty or stigma, notwithstanding the fact that usually there is little or no evidence pointing to such a conclusion.

In the Orient suicide has had an intimate relationship with traditional customs. Among the Eastern religions it would seem that both Brahminism and Buddhism have had encouraging effects, while Mohammedanism has severely condemned self-destruction. It is commonly supposed that the main sources of suicide lie somehow in the factors of civilization, and that it is unknown in primitive people. On investigation, however, we find that though in some regions it is non-existent, in others it occasionally occurs, and that there are still others in which it is quite prevalent.

Naturally enough, judging perhaps from our own feelings, we should expect that suicide would be most in evidence during the most gloomy months of the year. It is surprising, therefore, to find that in reality the death rate from this cause attains its highest limit in May and June. Through the following summer months the rate decreases until the lowest point is reached in November or December, and subsequently it gradually rises once more. Many conjectures have been made in an attempt to explain this seasonal variation, none of which, however, is satisfactory. It is plainly evident that suicide is not a reaction to the hardships associated with the winter months.

Suicidal Methods

Many points of interest arise when we review the various methods of committing suicide. As one might suppose from their instinctive make-up, women choose the less violent ways. The largest proportion of suicides among males is by hanging or strangulation, while among females drowning accounts for one-quarter of the total. Gas and other poisons come next with women, and in men cutting instruments and drowning. The use of firearms for this purpose here is comparatively infrequent compared with some countries, such as America, where among men it heads the list.

The enormous increase in the employment of coal-gas for this purpose has been very marked of late years. This can be well understood when it is realized how much more the gas stove has become a household requisite in modern times, and how the simplicity and handiness of such a method must appeal. Without doubt, from time to time, some special mode of self-destruction tends to become the vogue, and is imitated through its suggestive effect. In London the tube railway station tracks have had their allurement, but the digging of a deep pit beneath the rails seems to have stemmed the attempts in this particular way. The power of suggestion is often a big factor in determining not only the resolve to die but the method to be used, so not uncommonly we have almost an epidemic wave of suicide in which life is taken in a precisely similar manner.

The choice of how death shall come about depends often upon the most available and convenient means at hand, but the removal of such means from one who has made up his mind will only result in its being attempted in some other way. The determination of method, however, is frequently related to deep psychological factors, and the choice is thus perhaps unconsciously guided. One can the more easily conceive of there being at times some such hidden urge when we hear of some exceptional and dramatic methods being used, such as thrusting a red-hot poker down the throat, lying down before a steam-roller, leaping into a volcanic crater, plunging into molten glass, or self-crucifixion.

Psychological Undercurrents and Motivations

Through psychological study some light may be thrown upon the attendant mental undercurrents and the motivations that urge towards the act. Naturally enough, it will be regarded as a mode of refuge. There is much that can be said in support of such a point of view, for without doubt this is psychologically true. So frequently life is ended because of some difficult problem that seems impossible to solve. Poverty, ill-health, remorseful guilt, or loss of love are the circumstances that may finally constitute the crucial determination.

Nevertheless, we must look upon such causation as quite secondary, and seek the primary source in the hidden depths of the human personality. A little reflection tells us that there are many who are not thus defeated in the face of terrible ordeals and who continue to live on in circumstances which would seem to be intolerable. This at once shows us that the determining factor in suicide is really a subjective one. Though objective influences, of course, must be taken into account, they are not sufficient provocation alone to self-destruction ; whether or no suicide results will depend mainly upon unconscious mental forces.

Those who are unacquainted with modern psychological knowledge will not adequately realize how much mental functioning takes place in an unconscious mind, and how much mental conflict can be operative without conscious awareness of the fact. In the course of development there are gradually built up in the depths of the mind buried tendencies of opposing forces related to the battles that have ensued in the past between instinctive desires and their fulfilment or frustration. All our minds are replete with contradictory emotions, which impel us in contrary directions. So, according to circumstances and environment, we may be torn between the urges related to love and hatred, pleasure and pain, activity and passivity, life and death.

These conflicting states are the residue or reactivation of the experiences of child life which centred around those who were near and dear. Through disappointment and the frustration of instinctive desires the child will hate and feel great hostility towards those who stand in the way of such gratification. Such hostility commonly involves a death wish against a near and dear one, but this becomes repressed into the unconscious mind because the contrary emotion of love that gains the upper hand renders hate and hostility repugnant to the personality. We must, however, understand that to the child's mind the desire for a person's death has not the significance it has to an adult. It simply involves the idea of removal from the environment. Those who constantly practise analytical psychology repeatedly meet with evidence of these death wishes that in early life had been repressed and in later years became the source of mental suffering and disorder.

When the young develop on normal lines these hostile mental components are lessened and subjugated, and much of their force is drafted off into useful and constructive

channels. In less favourable circumstances they are generated in the mind in an exaggerated degree, and lie repressed in its depths, where, indirectly, they are dynamic, and are apt to be productive of mental disharmony in some way or other. Because the idea of hatred in connexion with those whom we are supposed to love is repellent to us, it is but seldom that such a feeling, even if only temporarily felt, will be frankly acknowledged. It is only a question of the degree of hatred that may be felt and the degree of stability and control that is possessed which will determine whether aggressive action, or perhaps even killing, follows. Since we are all potential haters, we are all potential murderers. Psycho-analytic research has given us excellent evidence for being able to say that one reason for self-destruction is that the suicide desires the death of another person, and that in this way he acts out upon himself what he wished to inflict upon someone else.

Freud's "Death-instinct"

How is it, though, that such a powerful instinct as that of self-preservation is overcome? In order to have further insight into the problem we must consider several more psychological factors. Freud has put forward the interesting speculation that there is both a life-instinct and a death-instinct. He thinks that, besides that instinct which constrains every living thing to cling to life, there is also sometimes operative a desire for non-being and the achieving of a state of passivity free from all stress and conflict. Usually the life force is far stronger, because there is a self-love which is so powerful that at the menace of death the personality cannot connive at its own end.

It can be said that there may always be a death-instinct in man which in the healthy is kept in check by a life-instinct which is more or less synonymous with love. When in certain constitutional types of persons there arise seemingly insurmountable barriers in the path of Eros, the death-instinct is only too liable to assert itself. Love then turns to hate and aggression, and the death-instinct which had been directed towards the outer world is turned back against the individual himself.

We can well understand how aggression outwards and inwards may be intimately related. According to its direction homicide or suicide may be the outcome; not infrequently we hear of those who murder someone and end their own life directly afterwards. Recent criminal statistics showed that very nearly one murderer out of four committed suicide, and where the act was unsuccessful the figures were very similar.

The Guilt Factor

Besides these factors of unconsciously motivated hate, aggression, and death-instinct, a great sense of guilt is almost invariably a potent force. The old Judaic law of "an eye for an eye, a tooth for a tooth," etc., comes into play. The act of suicide then becomes one of retribution, a self-punishment, a necessary penance for the sinful hostile wishes entertained. It is the death penalty, sentenced upon the self and carried out by the self. The self-punishment may sometimes be related to the idea of revenge, and hence punishment to both subject and object. "See what you have driven me to; you will be sorry for the rest of your life," would express the feelings of many a suicide who regards himself as slighted in love, and in this childish way seeks to get even with the object of his passion. The staging of a drama, with himself as hero, seems to have a lure. Fears of various sorts which have a morbid origin and are commonly linked up with unconscious guilt are secondary motives to self-destruction.

More Obscure Factors

There are occasions when no outward provocation can be discovered. We may be sure, however, that there was present an inner mental problem which could not be faced, and that, however normal the individual may have seemed to others, he was a sufferer from some of those unconscious warring psychological forces mentioned previously. As an incentive there is not infrequently an idea that death will involve eternal union with a lost loved one, or some vaguer conception of a union with God, or becoming thereby in tune with the infinite.

We may speak with much truth of chronic suicide. There are many for whom, for some reason, life has little value, and who therefore pursue lines of conduct that so evidently lead to illness and death. It may be also that many who died from fatal accidents really had suicidal predispositions. Anyone thus mentally constituted becomes careless of his foothold when mountain climbing, disregards danger notices when bathing, and is generally indifferent to traffic warnings. Being neglectful of health in general may have the same unwitting purpose in view. The psycho-analyst looks upon suicide as an illustration of the inherent desire in the mind of man to evade the difficulties and problems of life, to return to the source of life, to return to the mother and again to be in that pre-natal state where all needs were supplied and no responsibility existed. In the face of disappointment and frustration of instinctive desires, the mind in those so predisposed may easily regress.

Suicide and Mental Disease

When we deal with the relationship between suicide and mental disease the first question that presents itself is whether those who attempt or commit the act are necessarily insane. On this point there are conflicting views, but it would seem that there are a fair number of so-called normal people who do end their own lives, though without doubt certain types of psychotics are much more liable to do so. It is useless to take the extreme standpoint that suicide itself is sufficient evidence of insanity. It is quite impossible to draw any hard-and-fast line between normality and mental disease. Similar mental mechanisms and processes are at work in both. We know very well that there is no such thing as "temporary insanity" according to the popular notion, and that the coroner's court only brings in such a verdict, with little, if any, supporting evidence, in order that the stigma and any legal penalties may be evaded.

It is quite clear that a good proportion of those who commit suicide are afflicted with mental disease of some sort. Dr. East, when he was at Brixton Prison, analysed 1,000 consecutive cases where the act had been attempted, and found that about one-fifth were certifiable as insane. We must in the so-called normal cases predicate a suicidal predisposition through the possession of those unconscious conflicts and tendencies which have been considered at some length. Neurotic people are the victims of mental conflicts, and tend to suffer from much unconscious morbid guilt, yet, considering how numerous they are, the proportion of those who actually commit suicide is surprisingly small. Some psychiatrists will go so far as to deny that any neurotic will take such an extreme measure, but my experience leads me to regard such a statement as inaccurate and over-sanguine. It is also a highly popular fallacy to suppose that anyone who talks about suicide will not carry it out. Experience can only enable one to differentiate the individual who really means what he says and another who in a childish way through such a threat is endeavouring to get sympathy and attention and dominate some situation.

I think we can broadly say that it would be well for the doctor to look upon any patient who has a marked depression as a potential suicide. Depression may be a

symptom of many abnormal mental states, and it requires much psychiatric experience to be able to distinguish them. It is in the mental disorder of melancholia, or what we should more strictly term the depressive phase of manic-depressive insanity, that morbid depression is most marked and that suicide is always not only a possible but even a likely happening. This is especially so in that form of the disease which may show itself at the involutional period of life. Melancholia is certainly largely constitutionally determined, but apart from that it seems essentially a reaction to emotional stress, particularly as it occurs in family situations. There are good reasons for believing that the sufferer has identified himself with some loved object, and that the hate which has followed love through disappointment and frustration is thus directed on to the ego. The mental torments he inflicts upon himself gratify sadistic instincts, and the feelings of aggression which were at first aimed externally are turned inwards against the person himself. As Oscar Wilde wrote in his *Ballad of Reading Gaol*, "All men kill the thing they love." The melancholic does this to the object he once loved and then hated, which object became part of himself. There is not only the wish to kill but also the wish to be killed. There is not only the strong sadistic impulse but the contrary urge of submissive masochism. The great sense of guilt that is necessarily aroused by the murderous wishes demands a self-punishment and a punishment that will fit the crime —the death penalty self-inflicted.

Suicide in Other Forms of Psychosis

Suicide is not infrequent in that form of psychosis which is apt to show itself in adolescence—namely, dementia praecox. In some acute cases the attempts are not uncommonly very desperate ones, and the methods used may be particularly grotesque. When the attempt is unsuccessful, and the patient is questioned as to the reason for it, it may well be that he can give none, or the motive alleged be trifling and absurd. In this type of mental disorder the provocation is often impossible to predict. In other types any delusions will probably be in accord with any self-destructive impulse, and hallucinatory voices not infrequently order patients to kill themselves.

In more than one form of psychosis delusions of persecution may be in the foreground, and it can be well understood how such a victim to them may, in the course of time, become tired of the perpetual struggle against his supposed aggressors and seek the refuge of death. So sufferers from senile mental disorders, paranoia, or general paralysis of the insane may in such circumstances end their lives. From the psychological aspect we must regard the taking of alcohol in excess as a defence against some form of unconscious mental conflict, so that it is not surprising that alcoholism frequently involves a suicidal urge. In many cases the psychosis alone does not cause the suicide, but to it is added some concrete crisis which constitutes the immediate motive. The idea of thus acting as a means of escape is as evident in these individuals who so deal with an imagined trouble as in the case of more normal people who face a real one.

Suicide in General Practice

In general practice all these varied types may be met with. Where there is frank evidence of a severe mental disorder which patently needs supervision and control in a mental institution the needful steps for certification will be taken. For more than one reason, however, the medical man is often loath to take this procedure. The recognition of a suicidal possibility is not so easily grasped. Because of such difficulties I have long advocated the appointment of a medical officer of mental health in every area, who could be called upon in a consultative capacity and countersign any certificate.

Some of the milder cases who have some insight into their abnormal state may co-operate in their treatment and become voluntary boarders at a hospital. Where volition is not present it is possible to get cases admitted as "temporary patients" without certification where there is likelihood that recovery is probable. The Mental Treatment Act of 1930 made such a step legal, in order that by non-certification any stigma might be obviated and thus early treatment be encouraged. Only too often do we hear of suicides having taken place which might have been prevented if only such precautionary measures had been taken. All concerned are very wise after the event.

It is not possible to lay down specific rules by means of which an attempt at self-destruction may always be foretold. Where certain types of psychoses are present such a happening is always possible, but especially so in melancholia and any severe depressive state. When we are consulted by a neurotic who shows indications of depression and a sense of guilt our sympathy and endeavour to understand his difficulties and feelings will go far in banishing the idea of suicide from his mind. The attachment to the "all-knowing" physician will constitute a human link that will bind him in some degree to this world. When upon physical examination no organic signs are found to account for his hypochondriacal or other worrying symptoms do not say, as is so often done, "There is nothing the matter." The patient feels that if he is thus misunderstood, as of course he is, no other help is available, with the result that death may beckon. In cases where no psychosis is present it may be true to say that the death call will be robbed of its main potency when there remains some hope and an understanding friend exists. The feeling that somebody cares is a valuable prop to lean on.

Insomnia, of course, is a usual prominent symptom in patients whose mental conflicts are of a depressing nature. From the first this should be combated, and in this respect do not be afraid of the giving of suitable sedatives until the mind has gained a greater measure of peace. We hear much of the dangers of hypnotic drugs, but psychiatric experience recognizes no reason for such apprehension when rationally administered.

Psychotherapy can certainly do a great deal to help the individual to overcome the ravages of past unfortunate emotional experiences, and to adapt more rationally and more happily to the world in which he lives. Only in this way can there be an adequate possibility of lessening or removing the morbid foundations of guilt, hatred, sadism, and revenge, which loom so largely in the suicidal background. Analytic measures, however, should be supplemented by synthetic ones. The individual who has gained insight into those emotional factors that have played havoc with his mental well-being and obviated his being "master of his fate and captain of his soul" must be led to adopt some philosophy of life which can perpetually act as a guiding force and a support in times of strain and stress. To some spiritual help may be conducive to that end.

In the prevention of suicide our most rational prophylactic aim must be to try to lay down a healthy emotional foundation for the mental soil, so that in later years the mind shall be enabled to adapt adequately to the inevitable periods of painful reality that in some degree must come to all. Parents must be better educated in the manifold factors related to the character development of their children, and especially so in the direction of their love life. When disharmonies are manifested in early life child-guidance clinics can be, if necessary, consulted. Certain childish characteristics and symptoms may, to the expert eye, be indications of possible suicidal tendencies in later life.

TRACHOMATOUS CONJUNCTIVITIS*

BY

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During the last thirty years trachoma has become a comparatively rare disease in London, yet the stigmata of the disease are borne by as many as half the inhabitants of the globe. For it is practically universal among the Mongolian and Semitic races of the East, and among the Red Indian tribes; it is also widely spread among the Caucasians of India, and among the Malayans. Nevertheless our knowledge of the aetiology of trachoma is incomplete; the clinical diagnosis may be impossible in the absence of bulky and expensive apparatus; and no aids are to be obtained by means of chemical or microscopical tests; while the treatment has not improved during the last thirty years.

Pathological Anatomy

The response to attack by the virus of trachoma is a generalized flooding of the subepithelial tissue of the conjunctiva with lymphocytic cells. Typically, there are in addition special aggregations of these cells, which have been called follicles; however, in some cases no such follicles are to be differentiated from the general exudate of lymphocytes (Mikhail). The follicles, when present, differ in no way from similar aggregations of cells which appear in the condition known as follicular conjunctivitis.

The conjunctival epithelium first proliferates and then becomes villous; or it ulcerates and becomes replaced by scar-tissue epithelium. The numerous underlying sebaceous or Meibomian glands are at first affected by simple blockage of ducts and dilatation, the result of pressure by the cellular infiltration. Later the ducts become strangulated by the developing connective tissue, which begins to take the place of the lymphocytic exudate. The result is the appearance on the surface of the conjunctiva of numerous bleb-like excrescences which burst on pressure, giving vent to gelatinous matter, the retained secretion of the sebaceous glands, with numerous cells. Up to the present time these bleb-like excrescences have been looked upon by all trachomatologists as the follicles, described above, which have become dilated. There is no evidence that such dilatation occurs, nor has anyone ever observed such a phenomenon to develop. It would be impossible for such a metamorphosis of the follicles to occur. Mikhail also has observed the dilatations of the ducts of the Meibomian glands, but has not connected them with the bleb-like excrescences of the second stage of trachoma.

For the above description I am indebted to Pulvertaft. The whole process is a chronic progressive inflammatory change, almost certainly due to a secondary infection of the subepithelial tissues, following a primary epithelial lesion. The difference between other forms of conjunctivitis and trachoma is that the effect of the virus is much more lasting in trachoma, leading to this enormous subepithelial exudate, which penetrates to the tarsus, and via the fornical conjunctiva to the upper corneal limbus. The natural end of this severe exudate is its transformation into cicatricial tissue, thereby differentiating trachoma from other forms of conjunctivitis. The involvement of the tarsus in the cellular exudate and the subsequent cicatrization leads to thickening of this boat-shaped structure, and so to entropion. The trichiasis accompanying the entropion is due to the development of supernumerary lashes by offshoots from existing hair follicles. This new development is caused by the hyperaemic condition of the lid margin, which always occurs in serious cases of trachoma. The hypertrophy of the superficial conjunctival epithelium leads to the appearance of numerous polygonal areas, which form a papillary hypertrophy. This is the result of irritation, and is present in all forms of long-continued inflammation of the conjunctiva.

* Abstract of Hunterian Lecture on "The Surgery and Pathology of Trachomatous Conjunctivitis," delivered at the Royal College of Surgeons of England.

The Term "Pannus"

This term was originally applied to the cloth-like opacity which the cornea of an inveterate case of trachoma exhibited. Completely ignorant of the pathology of the disease, the surgeons of a former day used to attempt its removal. We now understand the term "pannus" to apply to an infiltration of the clear cornea by a cellular exudate, which is accompanied by the vascularization of a previously avascular tissue. This may be observable only by optical magnification or may be obvious to the naked eye. Following the primary epithelial lesion of the conjunctiva by the trachoma virus, whatever its nature may be, there is an infection of the subepithelial tissues to which response is made by a widespread inflammatory exudation. This spreads from the site of origin, near the retrotarsal fold, to the fornix, travelling beneath the epithelium, and from the fornix proceeds to the upper part of the limbus of the cornea. In this area pannus appears, and in early trachoma it is the only pathognomonic sign of the disease. In my opinion Mikhail has made it quite clear that the changes at the upper corneal limbus occur in this way, and that the limbus does not become infected from the trachomatous conjunctiva of the upper lid by contact.

The Cellular Invasion

In trachoma a cellular invasion of the cornea takes place; this has spread in the subepithelial tissue from the fornix. An increased vascularity is the response to this irritation. From the convexity of the end capillary loops of the cornea new vessels are developed, which run centripetally towards the centre of the cornea with few anastomoses.

The cellular invasion appears first as an indefinite grey infiltration at the limbus, which often becomes concentrated into a number of tiny grey elevations. These are about 0.2 or 0.4 mm. in diameter. They are separated from one another by the new vascular channels. This cellular infiltration, accompanied by new vessels, inserts itself between the corneal epithelium and Bowman's membrane. In severe cases Bowman's membrane may become partially destroyed, when the infiltration will penetrate between the layers of the corneal stroma. Marked opacity is thus produced, which becomes permanent on conversion of the inflammatory exudate into cicatricial tissue. The folly of an attempt "to cure pannus" by peritomy or other ill-conceived measures therefore becomes apparent.

Four Points in Pathology

In summarizing my views on the pathology of trachoma I advance four main points, all of which have great importance in our conception of the disease and in its diagnosis.

First, the primary epithelial lesion caused by the virus results in an inflammatory reaction in the subepithelial tissue, exhibited by a lymphocytic infiltration. The lymphocytes may be aggregated into follicles, but this is not always the case. When such follicles are present they cannot be distinguished pathologically from similar aggregations of cells which occur in follicular conjunctivitis.

Secondly, this lymphocytic invasion of the subepithelial tissue spreads from its area of inception in the tarsal conjunctiva to the upper fornix, and thence in the bulbar conjunctiva to the corneal limbus, where changes occur peculiar to trachoma.

Thirdly, the bleb-like excrescences, which exude a gelatinous material when ruptured, have no relation to the so-called trachoma follicles of an earlier stage of the disease.

Fourthly, the lymphocytic invasion of the subepithelial tissue penetrates the tarsus, and finally is resolved into connective tissue. Hence result the deformities of the lids, which occur in no other form of conjunctivitis.

The last three points entirely differentiate trachoma from any other form of conjunctivitis.

Clinical Manifestations of Trachoma

In heavily trachomatized countries such as Tunisia, Egypt, and Palestine the disease is frequently discovered during the course of, or during convalescence from, an

attack of acute bacterial conjunctivitis. But, as Charles Nicolle has said, the acute conjunctivitis is the occasion of the diagnosis and not the occasion of the disease. The majority of the inhabitants of these countries become infected during the first two years of life. Born of trachomatous mothers, and suckled for nearly two years, it can be only by a miracle that infection will be avoided.

Typically the disease begins imperceptibly. Atypically and rarely it begins with acute symptoms such as pain, lachrymation, and photophobia, in the absence of bacterial infection. But these acute symptoms appear when the disease has already developed, as the result of roughnesses of the upper palpebral conjunctiva, which cause irritation of the corneal nerves. So this is an exacerbation of an existing condition, and not an acute onset.

We can now proceed to enunciate a definition of trachoma as follows:

> Trachoma is a specific contagious disease of the conjunctiva in man. It is chronic in nature. It is characterized by a subepithelial infiltration of the conjunctiva by a cellular exudate, which spreads to the tarsus and to the cornea. It is followed by cicatricial changes in the affected tissues.

Trachoma manifests itself by widely differing anatomical changes, so, in order to gain a lucid idea of the disease, these must be arranged in the order of their development. I began to use such a classification in Egypt in 1905—it requires only slight modification to-day. The disease is divided into four stages: according to the comparative prominence of subepithelial lymphoid infiltration; bleb-like excrescences, which burst on pressure; papillary hypertrophy; and connective tissue formation.

First Stage.—After an incubation period of from four to ten days the first stage of trachoma makes its appearance by a subepithelial infiltration. This infiltration is usually, but not always, concentrated into tiny greyish islets, the so-called follicles; these form slight roughnesses, and first appear at the extremities of the tarsal conjunctiva at its upper border. The virulence of the trachoma virus is such that the subepithelial infiltration rapidly extends to the conjunctival fornix, and from thence to the upper corneal limbus. Pannus now appears. In the first stage of trachoma pannus is present as soon as the condition can be diagnosed; in fact the diagnosis rests on detecting pannus with the corneal microscope.

Second Stage.—This has been divided into subgroups for application to different clinical appearances which are common in the East. For present purposes one subgroup only need be mentioned. Here there are numerous bleb-like excrescences, which rupture on pressure, with emission of gelatinous material. These are dilated ducts of sebaceous or Meibomian glands. They have no relation to the tiny follicles of the first stage of the disease.

Third Stage.—This shows the resolution of the inflammatory infiltration commencing, and its replacement by scar tissue. Typically there are islands of inflamed conjunctiva surrounded by a cicatricial network. There is always some thickening of the tarsus by inflammatory products, often leading to entropion.

Fourth Stage.—At this point all inflammatory changes have come to an end. The tarsus is covered by scar-tissue epithelium, and there is more or less cicatricial change in the thin subepithelial tissue and in the tarsus.

Principles of Treatment

The disease is a local one, confined to the eyelids and the cornea. It confers no immunity until the normal epithelium has been replaced by scar-tissue epithelium. It produces no recognizable blood reactions.

The result of the action of the trachoma virus is an infiltration of the conjunctiva and cornea with lymphocytic cells. This is a manifestation of the defensive mechanism of the body tissues and fluids; the question immediately arises as to the utility of attempting to destroy this phenomenon, for no chemical or biological agent has been shown to have any neutralizing effect on the activity of the disease. It is in the first stage of the disease that these doubts assail our minds. In the second stage, with its bleb-like excrescences, it is clearly necessary to get rid of the retained secretion in the blocked ducts of the Meibomian glands by mechanical means. In the third stage the application of irritants such as copper sulphate is supposed to favour the deposition of fibrous tissue at the expense of the lymphocytic infiltration.

A distinction must be drawn between "mass treatment" and "individual treatment." By mass treatment I mean the direction by an ophthalmologist of a clinic where the actual manipulation of the lids is entrusted to nurses. By individual treatment I mean the daily treatment of each patient by the ophthalmologist himself. Mass treatment is unsatisfactory; it is doubtful if it is preferable to the daily instillation of antiseptic or astringent drops by the patient himself. Individual treatment by an experienced ophthalmologist gives a better result, with the minimum amount of cicatrization.

Operative Treatment

The principal sequelae of trachoma are trichiasis and trichiasis-entropion. Some of the operations which have been proposed to rectify the condition should never be performed; such as Burow's operation, which is usually followed by a recurrence; Gaillard's sutures, which depend on suppuration for their effect; and Flarer's operation, or scalping of the lid margin, which results in permanent misery for the patient, for the lashless lids roll in and become macerated by the conjunctival secretion.

There are certain principles which should govern operations: (1) the epilation of lashes should be strictly forbidden; (2) the eyelid should not be fixed in a clamp for operative purposes, but should be stretched on a metal shoehorn; (3) no skin should be removed from the lid.

The operations to be recommended are Streatfield's operation, in which a horizontal wedge-shaped strip of the tarsus is removed, and Van Millingen's operation, in which a mucous membrane graft is inserted in the free border of the lid posterior to the lashes.

Prophylaxis

In Egypt, Tunisia, Syria, and India the employment of native nurses for European children entails severe risk of trachomatous infection. I can state definitely that if at a private school or at the house of a public school, where a son of mine was attending as a boarder, a boy with active trachoma was to my knowledge admitted, I should at once remove my son. I have seen a boy infected with trachoma at a day school for English boys in one of the Crown Colonies. I have also seen the sergeant-major of a Territorial regiment become infected after a period of duty with an Indian regiment.

I wish to acknowledge indispensable assistance from Professor de Grosz, Budapest; Professor Panico, Rome; Drs. Pulvertaft and Waller, Westminster Hospital; Dr. Wilson and Major Stewart of Egypt; Dr. Rau; and Mr. Sorsby.

Temperatures lower than those existing in nature, lower even than those in interstellar space, have been attained in the past few years in physical laboratories in this country and abroad. With the object of illustrating the principles underlying this modern branch of science and their practical utility a special exhibition, the first in this country, has been organized by the Science Museum (South Kensington, S.W.), with the assistance of the scientific institutions and the industrial organizations concerned. The exhibition was opened by the President of the Royal Society, Sir William Bragg, on March 4th, and will remain on view to the public, free of charge, until May 31st. The Science Museum is open free on weekdays during this period (except Good Friday, April 10th) from 10 a.m. to 6 p.m., and on Sundays from 2.30 p.m. to 6 p.m. A survey of the subject which the exhibition covers has been prepared in the form of a handbook, and among the illustrations is included a chart showing the boiling, freezing, and critical points of the constituents of the atmosphere. This book will be on sale at the price of 6d. (by post 7d.), and copies may also be obtained from H.M. Stationery Office.

SPONTANEOUS HAEMATOMA OF THE ABDOMINAL WALL

BY

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Haematoma of the abdominal wall, the result of rupture of the rectus muscle, is a rare condition, but one which was recognized even in earliest times. It was described by Hippocrates and Galen, and by Maydl,[1] who published the first comprehensive communication on the subject and was able to collect fourteen cases up to the year 1880. Subsequent to this the condition was recognized more frequently, especially by military surgeons attached to the large conscript armies of the European countries. It occurred mainly in young, untrained recruits following vaulting into the saddle, the lifting of a heavy weight, or the more strenuous gymnastic exercises. Wohlgemuth[2] in 1923 was able to collect 127 cases of rupture of the rectus abdominis muscle, in over 100 of which the condition occurred in young muscular males and followed a severe strain or violence. The clinical histories were all very similar: a sharp pain in the lower abdomen was followed by the appearance of a swelling to the right or left of the median line, but with rest and conservative measures this swelling gradually resolved.

The Condition in Females

Of greater interest to surgeons and gynaecologists are the cases occurring in the female. Here the weakness of the musculature is the prime factor, so that the exciting strain may be so slight as to be unnoticed by the patient, and the term " spontaneous " may be more appropriately applied. The cases occurring in younger women are all associated, directly or indirectly, with pregnancy or parturition, and always occur in multiparae. It is possible that a toxic factor, following influenza, tuberculosis, or some infectious fever, may be a contributory weakening agent in some instances. The actual rupture follows on some trivial strain, such as coughing or vomiting, but the exciting cause is invariably too insignificant to be noticed by the patient or mentioned in her history.

Rupture of the rectus occurs occasionally in elderly women, where to the muscular weakness of advancing age are added atheromatous changes in the epigastric blood vessels. Again the immediate cause of rupture is trifling, and may be a cough or even the exertion of turning over in bed, as in Halperin's[3] case.

Clinical Features

Spontaneous haematoma in women is far from common, Hilgenreiner[4] in 1924 being able to collect only seven cases. Interest arises from the fact, however, that it gives rise to symptoms and signs strongly suggestive of an acute intra-abdominal condition, and is almost invariably diagnosed as such. There is a sudden onset with severe pain in the abdomen and evidence of peritoneal irritation in the form of vomiting, abdominal distension, and some muscular rigidity. A swelling, tender on palpation, develops to the right or left of the median line, and most commonly below the umbilicus. Here the rectus muscle is narrower, is not reinforced by tendinous intersections, and below the semilunar fold of Douglas is devoid of posterior sheath, and rests directly on transversalis fascia. A haematoma in this situation, therefore, bulges towards the peritoneal cavity, and is commonly mistaken for an ovarian cyst with some torsion of the pedicle, an acute appendicitis, or an incarcerated para-umbilical hernia. When rupture occurs in the upper right rectus the resulting haematoma has been mistaken for an acutely inflamed gall-bladder.

The following case, which came under my observation recently, illustrates the clinical picture, and incidentally the common diagnostic error.

Case Report

Mrs. A. was admitted to the Victoria Infirmary, Glasgow, as an " abdominal emergency " on the evening of April 7th, 1935. She was a woman of 41, in fair general health. She had passed the menopause, but had had ten pregnancies with three miscarriages. Two weeks before admission she had an attack of influenza, from which she had not entirely recovered, and she still suffered from a troublesome cough.

On the morning of admission, while engaged with her housework, she was seized with an acute stabbing pain in the left lower abdomen. This occurred at the end of a short coughing spell, though this fact was only ascertained after the diagnosis had been confirmed by operation. She continued to work for two hours, but finally had to give up and was helped to bed. Hot foments were applied without relief, and the pain continued unabated until her admission to hospital five hours later.

EXAMINATION

On examination she was in a condition of shock. She was suffering severe pain, and lay in bed with her knees drawn up. The abdomen was full, and there was some " guarding " of the muscles. In the left lower abdomen a rounded swelling could be felt. It extended from just above the pubis to almost the level of the umbilicus, and laterally it extended from a point about 1 inch to the left of the middle line to within 1½ inches of the anterior superior iliac spine. This swelling was tense, elastic in consistency, and very tender. Bimanual examination revealed no bulging or tenderness in the fornices, and the uterus was small and freely movable. The temperature was 99.2° F., the pulse 94, and respirations 24. The urine contained no abnormal constituents.

A tentative diagnosis of ovarian cyst with some torsion of the pedicle was made, though vaginal examination gave no confirmation of this, and one had the mental reservation that the tumour was perhaps too easily palpable.

OPERATION

At operation a left paramedian incision was made and the sheath of the rectus incised. A large quantity of fluid blood with some clots was evacuated from within the sheath. The left rectus muscle was partially torn across about 1 inch below the semilunar fold of Douglas, and there was still some active bleeding from the torn edges. The deep epigastric vessels were recognized under the transversalis fascia, but were intact. The torn edges of the muscles were sutured with mattress sutures of catgut, and the rectus sheath was closed, drainage with ribbon gauze being provided. The patient made an uninterrupted recovery, and was discharged from hospital at the end of three weeks.

Commentary

This case is presented primarily because of its rarity and its diagnostic interest. Rupture of the rectus muscle is most common in young men in association with severe forms of violence, and in these cases the diagnosis is never in doubt. In multiparous and also in elderly women the lesion may be provoked by a trivial cause, and occurring as it does most commonly below the semilunar fold of Douglas, it may mimic an intraperitoneal abdominal or pelvic condition. The clinical picture of severe abdominal pain and shock is also misleading, so that it is not surprising to learn that in not one of Hilgenreiner's collected cases was a correct diagnosis made before operation.

The case reported here affords a gentle reminder to surgeons that in eagerness to uncover the mysteries of " Pandora's box," the lid should not be forgotten entirely.

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RAT-BITE FEVER FROM A KITTEN

BY

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Cases of fever of unknown origin are met in general practice and treatment is often symptomatic until the cause of the illness is known. In certain cases, like this one, a definite diagnosis will indicate an absolute cure.

Case History

A school teacher, aged 31, arrived at the Frederick Andrew Convalescent Home, West Malling, on December 3rd, 1935, having been treated for septic lymphangitis in London over a period of three months. The history of the illness at once suggested that the cause might have been an infection by *Spirillum minus*; in brief, that it was an example of sodoku, or rat-bite fever.

August 24th, 1935.—Whilst on holiday in a Devonshire farmhouse she was stroking a sick kitten, and was promptly scratched and bitten on the little finger; the slight wound was cleansed in running water, painted with iodine, and healed without any dressing.

September 2nd.—On returning to London the patient noticed the little finger was beginning to swell and to be tender for the first time. It became red and throbbed, and she felt quite ill.

September 6th.—She consulted a doctor, who incised the little finger, but found no pus.

September 7th.—Alarmed by a spreading lymphangitis the doctor sent her to hospital, where she was admitted, and remained till November 30th.

SPREAD OF INFECTION

Under nitrous oxide anaesthesia further incisions were made and drained with subcutaneous rubber strips, but again no pus was found. Unfortunately the temperature charts and notes taken during these three months in hospital had been mislaid. The history given by the patient, however, and checked by the recollections of the staff, indicated that there was a severe infection of right hand and arm; that fever and prostration accompanied a lymphangitis extending to the shoulder; that the fever had periods of remission; and that there was an anomalous rash more marked at some times than at others.

During the first six weeks treatment had included boric foments, saline arm baths, magnesium sulphate compresses, antiphlogistine, ultra-violet rays, and arm-splinting. Sleeping draughts had been given. Later a culture of *Staphylococcus aureus* was made from the wound, and an autogenous vaccine was prepared and used in ascending doses. An irregular pyrexia was thought to be a reaction to the vaccine, but it seems that fever had existed before the use of the vaccine was begun and continued after it ceased; the *Staphylococcus aureus* was possibly a secondary contamination. Three days before leaving hospital there was a pyrexial attack (102° F.), with a generalized aching and a rash, followed by sweating.

December 3rd.—She was admitted to the convalescent home, looking tired and debilitated; her history suggested the diagnosis.

CLINICAL EXAMINATION

December 13th.—It was learned that the patient had been sweating at night, and was not looking well, though her temperature was only 100° F., and her respirations and pulse rate were normal. The tongue was clean and moist, the teeth were in order, and the throat was normal. The bowels were being opened regularly. Knee-jerks and pupils reacted normally. There was no coryza, but a slight tendency to cough; the lungs were normal. No abnormality was detected in the urine. There was tenderness over the lower ribs on both sides, and in the dorsal spine, and discomfort on deep pressure over the liver and spleen, neither of which organs could be felt. There was some headache, with stiffness in the neck and in the temporo-mandibular joints.

The whole body was covered with a maculo-erythematous rash, most vivid in the upper chest, on both sides of the neck, and on the forehead, where it had a circinate appearance. There was no itching, or sign of seborrhoea of the scalp. The lymphatic glands were enlarged in both axillae and both posterior cervical regions, but the largest was the right supratrochlear gland; this was very tender, soft, and mobile. There was an unusually vigorous overgrowth of hair of recent development over the right forearm and the dorsum of the hand and fingers, in marked contrast to the left side; even the patient's thoughts ran to fur; but the explanation probably lay in the many treatments in hospital rather than in the kitten factor.

Haematology and Biopsy

Blood examination showed nothing abnormal except a leucocytosis of 16,000 per c.mm.; haemoglobin was 85 per cent. Differential count: polymorphs, 82 per cent.; eosinophils, 2 per cent.; lymphocytes, 14 per cent.; large mononuclears, 2 per cent.

In the hope of demonstrating a cause I injected 1 c.cm. of 1 per cent. sodium citrate into the supratrochlear gland, and after slight massage a blood-stained fluid was withdrawn, from which films were made. No spirilla were seen, and cultures on agar and blood serum were sterile.

FURTHER INVESTIGATION

December 21st.—The patient had been living a quiet, convalescent home life, but stated that she had had night sweating, and there was a slight rise of temperature, with exacerbation of the erythematous rash on the neck and forehead. It was again explained to her that it was highly probable that she was suffering from rat-bite fever, but that her blood not having proved positive it might be possible to make the diagnosis indirectly by watching the effect of neo-salvarsan injections, or directly by removing a gland during an attack and inoculating a guinea-pig. The patient, being most intelligent and anxious to give all possible help, agreed that no treatment should be given until the next attack, which it was prophesied would come shortly. All preparations were made.

December 28th.—A similar attack began at 11 a.m., with a temperature of 101.8° F., erythematous rash, tender glands, and an aching body. The blood films were again negative. Leucocytosis, 13,000 per c.mm.; haemoglobin, 83 per cent. Differential count: polymorphs, 86 per cent.; lymphocytes, 12 per cent.; large mononuclears, 2 per cent.

Under local anaesthesia the enlarged supratrochlear gland was excised, placed in sterile citrate solution, and within forty-five minutes was handed to Dr. Constant Ponder of the Kent County Laboratory at Maidstone. The gland was divided into three portions, and one-third was ground up and injected subcutaneously into a guinea-pig. The other portions were used for special histo-pathological investigations.

SPECIFIC THERAPY

January 1st, 1936.—As promised, the patient received 0.3 gram of neokharsivan in 5 c.cm. of distilled water intravenously; the wound of the gland excision had healed normally, but was still tender.

January 7th.—The patient left the home very much improved in health and spirits; the rash, which had lingered in an unobtrusive fashion even between bouts of fever, seemed to disappear within a couple of days of the injection. It was explained that a further dose might be required later, and an explanatory letter was sent to her doctor.

January 28th.—Thirty-one days after inoculation the guinea-pig showed conjunctivitis of the right eye, and seemed less active. Blood films were found to contain a minute spirillum answering the description of *Spirillum minus*, the specific cause of rat-bite fever. This identification was confirmed by Dr. C. M. Wenyon, Director of the Wellcome Bureau of Scientific Research.

January 31st.—The patient, on being informed that the diagnosis of rat-bite fever had been proved, wrote to say that she was "feeling much stronger, and that it had not

been found necessary to have a further injection of neokharsivan."

February 14th.—A further letter stated that she was free from symptoms, but that the site of injection had been tender, with some stiffness; massage had improved it.

Hypertrichosis

The profuse development of coarse hair on the right forearm and dorsum of the hand and fingers has been noted, and was a source of anxiety to the patient. Hypertrichosis may be associated with lesions of the adrenals, and although no record of examination of the human adrenals in this disease can be found, yet in animals experimentally infected the spirilla can be found aggregated in this situation. In all probability it was a reaction to local treatments, perhaps activated by spirillar toxins. But, at the same time, alopecia has been noted in some animal experiments. The rash during pyrexia was maculo-erythematous, with no signs of papules or urticaria or subsequent desquamation; between attacks it was just visible.

The glandular enlargement was both local and general. The supratrochlear gland was the first to be enlarged and tender, and was the one selected for excision. The smear made from it during the preliminary investigation did not show the presence of the spirillum, yet from the subsequent successful inoculation into the guinea-pig this negative finding may have been the fault of the examiner; as the average spirillum measured only 2.5μ when found in the guinea-pig it might have been missed without much difficulty.

Commentary

This case illustrates several points of importance. Obviously there is value in an accurate history. Quite apart from the kitten bite, or scratch, it was clear that a quiet, latent period of nine days was followed by local swelling and tenderness. Later on, development into a series of pyrexial attacks over some months naturally suggested rat-bite fever, which name does not exclude the fact that the infection has been spread by both brown and black rats, cats and kittens, dogs, ferrets, and even by a pig.

Another point suggested by the history is that no improvement resulted from a great variety of treatments whilst in hospital: the patient stated that a severe attack occurred three days before she left the wards, and it was four months before the neokharsivan injection abruptly terminated the illness. It is of interest to note that the duration of (presumably) untreated cases has been reported as being four, eight, and even twenty years.

In this case the patient estimates that during her stay in hospital there were ten to twelve attacks of fever: it is clear that in the convalescent home, on December 13th, December 21st, and December 28th, pyrexia was present. Most records in other cases mention 104° F., or more, but in this case it seems that 101° to 102° F. was the maximum temperature reached during the attacks.

Perhaps the value of this clinical and pathological record of a case of rat-bite fever met in general practice lies in the reminder that the disease is of world-wide distribution. As in this case, its real character is occasionally masked by sepsis; at each operation, however, there was failure to find pus. In the presence of a spreading lymphangitis, such as this case presented at the beginning, the problem before the surgeon is a difficult one, unless his vision is microscopical, with the clinical history as a fine adjustment.

No attempt has been made at a bibliography on the subject of rat-bite fever, since Dr. Andrew Robertson's review in the *Annals of Tropical Medicine and Parasitology* (October 22nd, 1930, xxiv, No. 3) is comprehensive, giving some 250 references.

RAT-BITE FEVER FROM A CAT

BY

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The comparative rarity of this condition seems sufficient justification for putting on record the following case.

Case History

The patient, a nulliparous woman aged 42 years, had always enjoyed good health previous to her present illness.

May 16th, 1935.—Whilst attempting to separate two fighting cats she sustained a severe bite on the left forearm, together with multiple scratches on both the forearm and the hand. The bite was painted with iodine and sutured in the out-patient department of the Redhill County Hospital, and healed by first intention. About ten days later she felt unwell and was feverish, and the wound, which previously had been healthy, broke down and became septic. This was accompanied by lymphangitis and axillary lymphadenitis.

May 30th.—Her temperature had risen to 103° F., and she was admitted to Redhill Hospital. At that time her general toxic state appeared more severe than could be accounted for by the local condition. She was treated by injections of sodium cacodylate and anti-streptococcal serum; after three days the local condition had much improved and her temperature had fallen to normal. There were no rigors and no mental symptoms at that time.

June 6th.—A week later, however, she suffered from delusions and was "peculiar mentally," resembling a case of delirium tremens. The next day her mental condition had become so much worse that she was transferred to Park Royal Hospital for observation, but for family reasons she was removed to her own home the same day.

June 7th-16th.—She then ran an irregular temperature and was treated at home by her own doctor for sepsis of the left forearm. Her mental condition steadily improved, but on June 16th she was admitted to St. Andrew's Hospital suffering from an abscess in the region of the bite, pyrexia, and general malaise.

EXAMINATION AND OPERATION

On admission her temperature was 103° F., pulse 134, respiration rate 20, and she looked ill. Her mental state had obviously improved, and she answered questions quite rationally, but appeared to be frightened by the lights in the ward and was somewhat suspicious of the other patients. Over the lower end of the left ulna, on the site of the original wound, was an abscess two inches by one and a half inches in size, with a marked lymphangitis and enlargement and tenderness of the axillary glands. On the outer side of the right arm, a few inches above the elbow-joint, were two dusky red patches, about one inch in diameter, which did not fade on pressure.

On the following day her temperature was 100° F., and the pulse rate 110; the abscess on the left arm was incised and about two drachms of thin pus were evacuated. The temperature fell and remained normal for a week, and the wound, which was being treated with saline baths and flavine and paraffin dressings, steadily improved.

A week after the operation, however, the temperature again rose to 103.8° F., and the pulse to 100, though the patient's general condition was, if anything, rather better than before. The ecchymoses on the right arm had faded, and no fresh ones had appeared. At this time a swelling about two inches by one and a half inches in size was noticed on the dorsum of the left forearm. There were no signs of inflammation, but it was incised and a little serous fluid, but no pus, was evacuated. The following day the temperature was again normal. During the next fortnight the general condition improved, but the temperature showed periodic rises, which were not accompanied by malaise; both wounds remained healed, and she was discharged on July 10th.

POST-OPERATIVE PROGRESS

During her first fortnight at home she remained well, except for slight stiffness of the left wrist. On July 28th, however, her temperature rose to 101° F., she felt ill, and complained of generalized muscular pains, and on this day, also, the original wound again broke down. For the next ten days the muscular pains persisted and her temperature fluctuated, reaching 101° F. on two occasions. The wound on the left forearm improved steadily with simple local treatment.

August 8th.—She was readmitted to St. Andrew's Hospital with a temperature of 100° F., a pulse rate of 110, and generalized muscular tenderness. The old wound on the left forearm was covered by a small, dry scab, and enlarged glands were present in the left axilla. Four days after admission the temperature rose to 102° F. and she developed a patchy erythematous rash, most marked on the limbs and trunk, but also present on the face to a lesser degree; it was unaccompanied by pruritus. The enlarged glands and the muscular pains persisted. At this time a leucocyte count showed a total of 19,000 cells per c.mm.; polymorphs, 80 per cent.; lymphocytes, 18 per cent.; large mononuclears, 1 per cent.; no abnormal cells were seen. *X*-ray examination of the left ulna showed no disease of the underlying bone. In the course of the next few days the rash gradually faded without desquamation and the muscular pains disappeared, but her intermittent fever continued.

SPECIFIC THERAPY

August 17th.—Neokharsivan (0.3 gram) was given intravenously, followed by a similar dose four days later, after which the patient at her own request returned home. From this time onwards her temperature, recorded at home, was never raised, and she felt well.

September 5th.—Two swellings similar in character to that on the left forearm appeared, one in the right sterno-mastoid and the other in the right trapezius muscle; 0.45 gram of neokharsivan was injected. A week later both swellings had disappeared and a further dose of 0.45 gram of neokharsivan was given. From this date to the present time no further symptoms have occurred, and she remains in good health. She received as a precautionary measure a third injection of 0.45 gram of neokharsivan on September 9th. Throughout her illness the Wassermann reaction was never found to be positive, no abnormal constituents were present in the urine, nor was the causative organism ever isolated.

Commentary

There seems little doubt that the above case was one of rat-bite fever. The typical clinical history, including the repeated breaking-down of the wound, the enlarged glands, the rash, the muscular swellings, the periodic rises in temperature, the polymorphonuclear leucocytosis, and the response to arsenical medication are together almost pathognomonic of this condition.

This case bears a striking resemblance to the one recorded by Beaumont and Gill in the *Journal* of March 23rd, 1935 (p. 582), although the temperature never reached such a high level in this case.

I am indebted to Mr. J. Basil Hume for permission to publish this case.

C. Achard (*Monde Méd.*, January 15th, 1936, p. 33), who records two illustrative cases in men aged 21 and 24, states that haematuria may be observed in typhoid fever under two conditions—namely, as part of a haemorrhagic syndrome or on the occasion of a renal lesion. Clinically, the most interesting cases are those in which haematuria occurs at the onset of typhoid fever, and may, for some time at least, lead to an error in diagnosis. While Pissay and Gauchery consider that this form is generally severe, and emphasize the gravity of oliguria, numerous cases of recovery are on record. Generally speaking, haematuria occurring at an early stage, when it forms part of a haemorrhagic syndrome, is more serious than that beginning when the temperature is falling or in convalescence.

Clinical Memoranda

Epistaxis Treated with Viper Venom

A man aged 63 had a severe epistaxis on a Saturday night. He was seen by one of us on the following morning, and as the bleeding was severe was put into a nursing home and the nares plugged. The plugging was replaced every twenty-four hours, but failed to stop the bleeding. Hazeline and adrenaline were tried locally, but without effect. The cardiovascular system and blood count and urine were normal. After six days' plugging and injections of haemostatic serum without effect it was decided to try viper venom. This course was adopted because there was a history of haemophilia in a brother, and the patient himself had severe haemorrhage after teeth extraction. Through the kindness of the Wellcome Research Laboratories a supply of viper venom was obtained. The nares was lightly plugged with gauze soaked in viper venom on Friday morning—that is, after six days of more or less continuous haemorrhage. The haemorrhage ceased at once, and has not recurred after three weeks. The blood pressure, which was 160 systolic and fell to 120, is now slowly rising, and the patient is recovering his normal health.

LIONEL HIGGINS, F.R.C.S.
R. THORNE THORNE, M.D.

Woking.

Asthma Treated by Mandelic Acid

In view of the recent publications on the mandelic acid treatment of urinary infections I am prompted to report the following case of asthma, with accompanying bacilluria, in which all pulmonary signs and symptoms have disappeared following mandelic acid medication.

Case Report

The patient was a female aged 36, with a history of chronic winter cough of some years' standing, and dyspnoeic attacks of an asthmatic nature starting in May, 1935.

Previous History.—Married, three children, eldest aged 11, the stillbirth of the youngest four years ago being followed by bacilluria, probably *B. coli*. Despite treatment the urine has since remained cloudy and turbid.

Present History.—The patient, on her return from Germany in May, 1935, resided adjacent to an old disused windmill. After about ten days she started having attacks of slight dyspnoea, and when seen by me a month later was suffering from mild but definite asthma. In addition there was an accompanying chronic bronchitis, and numerous asthmatic rhonchi were audible on auscultation. The attacks were cut short by ephedrine and the bronchitis relieved by a sedative cough mixture. The asthmatic attacks, however, rapidly increased in frequency and severity, requiring larger and larger doses of ephedrine.

In September an attack occurred, lasting thirty-six hours, which necessitated the use of morphine to terminate it. Assuming that the cause lay in some foreign protein emanating from the old windmill, I had the patient removed from the district to my own house, fifty miles away, where she was under constant observation. During the following three weeks there was no florid attack, but she was very dyspnoeic on slight exertion, and her cough was very troublesome. At the end of this period another acute attack supervened. This was ushered in by cloudy, turbid, foul-smelling urine, which had all the appearance of a bacilluria.

The temperature was raised to 100.7° F., tongue coated, chest full of asthmatic rhonchi, and the patient looked extremely ill and toxic. The attack lasted twenty-four hours, leaving her exhausted and complaining of pain in both kidneys. It was then decided to start a fourteen-day course of mandelic acid, with a view to clearing the urine, and all other treatment was stopped.

Mandelic Acid Therapy.—The result was dramatic. On the third day the urine was clear, all pain had disappeared, and the chest was clearing. By the tenth day no adventitious sounds were to be heard in the chest.

Since commencing treatment six weeks ago the patient has had no further attack of asthma, she does not suffer from dyspnoea on exertion, her chronic bronchitis has cleared, and she states that she has not enjoyed such perfect health for years.

Southsea. C. P. O'TOOLE, L.R.C.P. and S.I.

Resuscitation by Cardiac Massage

In the *Journal* of September 21st, 1935, I read Mr. W. B. Primrose's article on cardiac resuscitation (p. 540), and on Monday, September 23rd, I was called upon to apply the method he outlined. The case was one of papilloma of the bladder, which was being treated by endoscopic diathermy under chloroform anaesthesia.

CASE REPORT

The patient was a frail individual of about 45 years of age. Towards the end of the operation he began to strain and retch, which made cystoscopic manipulation impossible until the anaesthesia was deepened. Less than a minute after resuming the operation my attention was arrested by a discharge of semen and prostatic secretion alongside the cystoscope. The patient was then extremely cyanosed and had ceased to breathe. There was no pulse at the wrist and no visible or palpable cardiac impulse. The usual two or three minutes were wasted in fruitless artificial respiration. Amyl nitrite was administered but without effect, and I prepared to open the abdomen.

CARDIAC MASSAGE

The heart was small and quite motionless. With the left hand on the sternum and the right behind the heart I squeezed, rapidly at first and then at a normal rhythm. In such circumstances time is notoriously difficult to estimate, but I must have continued this manipulation for at least two minutes without feeling any spontaneous movement of the heart. The procedure itself is definitely a massage of the lungs as well as of the heart, for expiratory puffs were audible with each upward compression of the diaphragm. I may have continued this manœuvre for slightly more than two minutes, but certainly I was becoming decidedly fatigued when I decided to try intracardiac adrenaline: 1 c.cm. was injected directly into the ventricle. The effect was immediate and almost magical. With each squeeze that followed the heart was felt to be enlarging, and suddenly it began to beat wildly. It was several minutes more before spontaneous respiration was established, but after that there was no further immediate anxiety.

FURTHER TREATMENT

The patient was returned to bed with his heart still beating tumultuously, in a manner strongly suggestive of overdosage of adrenaline. The pulse was charted as ? 160, and was at first quite strong. Later it weakened, and he was given strophanthin, grain 1/100, hypodermically every two hours. As the anaesthetic wore off he began to have violent convulsions at approximately ten-minute intervals. One hour after leaving the operating theatre he was completely unconscious, the pupils were widely dilated, and the corneal reflex was absent. Every ten minutes tetanic convulsions involved the whole body with an associated marked opisthotonos, each attack lasting for about four to five minutes. The intervals gradually lengthened and the last attack took place five and a half hours after his return to consciousness on September 25th—that is, two days after the operation.

Oxygen and carbon dioxide were administered for three minutes in every ten throughout the first night, the pulse remaining well over 100 a minute until after midnight. Early next morning the corneal reflex returned, the eyes began to roll slowly from side to side, the pupils contracted to normal size, were equal, and reacted to light. Respirations were quiet and regular, and the pulse rate had dropped to 74. It was a full thirty hours before the fits ceased and forty-eight hours before he recovered consciousness. At first he was somewhat vacant, but responded intelligently to simple questions, although his reaction time was somewhat delayed. He had no recollection of having been to the operating theatre, but he did remember a diagnostic cystoscopy done four days previously. He spoke with difficulty and very slowly, as though he had ill-fitting dentures, but he was able to put out his tongue freely, and there was no deviation. He smiled quite symmetrically, and the masseter contractions were equally active. The plantar reflexes were normal, though the abdominal reflexes were absent.

COMMENTARY

Six days later he was perfectly normal again, apart from having no memory at all of the four days between the diagnostic and the operative cystoscopies. Points of general interest are: (1) the seminal ejaculation, which would seem to have marked the moment of expiry as it is said to do in hanging; (2) the action of the adrenaline on the peripheral vessels, to which it was pumped from the heart by cardiac massage, preceding the action on the heart itself; (3) the fact that there has been an apparently complete recovery after a period of cessation of circulation long enough to compromise the central nervous system seriously. The question arises as to how much of the recovery was due to the forced action of the heart induced by adrenaline and how much to the oxygen, which was so assiduously pumped into him for days afterwards.

I am much indebted to Dr. Bernard Bowman, who directed the after-treatment, and whose notes formed the basis of my description.

Ashton-under-Lyne. J. V. FIDDIAN, M.D.

Primary Hepatic Actinomycosis

CASE REPORT

The patient, a dairy worker aged 30, was taken ill suddenly in May, 1935, with acute abdominal symptoms, and she was admitted to a general hospital, remaining there one month. Coming under the tuberculosis department, she was admitted to the Fazakerley Sanatorium on October 25th, 1935, tuberculous salpingitis being suspected. She complained of lassitude, loss of weight, constipation for one week, previously some diarrhoea, anorexia, and amenorrhoea of three months' duration. Her general condition was poor. There was no mass or fluid in the abdomen, but there was some tenderness in the right iliac fossa and a cystic mass was palpable in the pouch of Douglas.

On November 6th the right pleural cavity was aspirated, but only a few minims of clear fluid were withdrawn, and repeated aspirations were unsuccessful. *X*-ray examination showed a small pleural effusion with inflammatory changes in the right lower lobe. The temperature ran between 99° and 101° F., with evening rises and accompanying tachycardia. There was no sputum, and the urine was normal.

POST-MORTEM EXAMINATION

Death occurred on November 23rd, being preceded by a complaint of dysphagia. At necropsy multiple small abscesses were found in the liver, and there was a pericarditis with a shaggy exudate and fibrinous effusion; the liver and pericardium were found on section to be infected with actinomycoses. There was a small clear effusion in both pleural cavities, with simple bronchopneumonic consolidation in the right lower lobe. A small amount of fluid was present in the abdominal cavity; the intestines, including the caecum and appendix, were healthy, and the pelvic organs were normal, the mass in the pouch of Douglas apparently having absorbed.

The case is of interest in view of the occurrence of actinomycosis primarily in the liver, the occupation of the patient, and the total absence of localizing signs pointing to a pericardial or hepatic lesion.

I am indebted to Dr. Walter Crane, medical superintendent, for permission to publish the case, to Mr. J. T. Morrison, visiting surgeon, and to Dr. Dawbarn, pathologist at Walton Hospital, for reporting on the sections.

T. J. COCKBURN, M.B., Ch.B.,
Liverpool. Assistant R.M.O., Fazakerley Sanatorium.

Reviews

X-RAY THERAPY

We are glad to extend a cordial welcome to Dr. FFRANGCON ROBERTS'S *Principles and Practice of X-Ray Therapy*.[1] Such a work has long been overdue, and this book appears to us eminently suited to the purpose for which it is designed. To teach *x*-ray therapy—or any other form of therapy—by means of the written word is, of course, an impossibility, but an outline of the guiding principles is a manifest necessity.

The first half of Dr. Roberts's book is devoted to a consideration of the scientific principles upon which *x*-ray therapy is based, and opens with a clear and interesting account of the nature and source of *x* rays. The nature of continuous and of characteristic line spectra is explained, and the relations between exciting voltage and minimum wave-lengths produced are set forth in a brief table ; a table is likewise given showing the minimum exciting voltages for the production of the K lines of the spectra of different elements. The succeeding chapter is devoted to *x*-ray apparatus, and forms a refreshing change from certain textbooks which seem to be mainly compiled from the figures in instrument-makers' catalogues. The main principles are plainly and briefly given, and the illustrations are limited to a number of well-executed and really informative diagrams. The chapter finishes with a brief note on accommodation and protection ; but here we think the author would have done well to emphasize in the strongest possible manner the absolute necessity for such protection, and for adequate physical tests being carried out to ensure its efficiency. It may be noted also that copies of the recommendations of the British *X*-Ray and Radium Protection Committee can be obtained free of charge from the honorary secretaries to the Committee at 32, Welbeck Street, London, W.

Measurements of quantity and quality are considered next, and there follows a description of the relations between surface dose and depth dose, cross-fire radiation, the time factor and the expression of dosage. The way in which all these matters have been clearly discussed in a little over a hundred pages is worthy of the highest commendation. The succeeding chapter on "The Action of *X* Rays on Normal Tissues" may be considered as either closing the more purely scientific section or as opening the more purely clinical section. This seems to us to be the least successful chapter in the book ; not because its subject-matter is incorrectly stated, but because it endeavours to compress a matter of vital importance to the radiotherapist into the limited space of ten pages. A recent monograph on this subject shows how very complex are the changes produced by radiations in living tissues.

The treatment of malignant disease deservedly occupies rather more than half of the remainder of the book. The subject is discussed under the headings of general principles, and treatment in the more commonly affected sites. Further chapters deal with lymphadenoma, diseases of the blood-forming organs, hyperthyroidism, non-malignant diseases of the female generative organs, and diseases of the skin. Space compels brevity, even to a mere enumeration of these various subjects. It may, however, be confidently said that the teaching is sound and practical, and the book will form a standard text for those beginning the study of *x*-ray therapy. Dr. Roberts is to be congratulated upon a much-needed addition to British radiological literature.

[1] *The Principles and Practice of X-Ray Therapy.* By Ffrangcon Roberts, M.A., M.D., M.R.C.P., D.M.R.E. London: H. K. Lewis and Co. Ltd. 1936 (Pp. 214 ; 115 figures. 10s. 6d. net.)

PSYCHOSOMATIC RELATIONSHIPS

Dr. H. FLANDERS DUNBAR has undertaken a formidable task in surveying the literature on *Emotions and Bodily Changes* for the period 1910–33.[2] Ever since Cannon's pioneer work on the subject interest has been aroused in psychosomatic relationships, and it is good to have a work of reference along bibliographical lines which attempts to deal with it as a whole. As the author rightly states, many vital problems lie between the sciences and cannot even be perceived without going beyond the confines of a specialty. There must be a knowledge of previous work done by others if the time and efforts of researchers are not to be wasted. But to attempt such a record is so laborious that it is not easy to find anyone sufficiently altruistic to undertake it. Therefore workers in many departments owe Dr. Dunbar a debt of gratitude for a useful if uninspiring book. His plan is a sound one. The first part deals with methods such as the psychogalvanometer and biochemical technique. In the second part the evidence is arranged under the various organs and systems, while the third part deals with therapeutic conclusions. The bibliographical index alone occupies 115 pages and includes 2,251 references. Even this seems surprisingly small in view of the output of work in the twenty-three years comprised in the survey, but the author makes it clear that papers dealing with either the psychic or somatic side alone are not included, but only those dealing with psychosomatic relationships. We cannot pretend to have read the whole of the book—in fact, we doubt whether anyone except the author and the proof-reader would attempt such a task ; all the more praise to the industry that has accomplished such an unselfish piece of work.

PSYCHOLOGY IN MODERN LIFE

If a reviewer wished to indicate for the benefit of prospective readers the general character and effect of the series of lectures recently organized by the Institute of Medical Psychology, and now published as a volume under the title of *Psychology and Modern Problems*,[3] he could not, perhaps, do better than underline one word in the description given of the book on the publishers' wrapper. It is there said to be "a volume of immense interest to anyone concerned with the present trend of human desire and performance." The word to be emphasized is "trend." A trend is a movement, a drift, and therefore lends itself less easily to clear-cut delineation, precise definition, or accurate assessment of many of its aspects than do things which are static. The drift, moreover, being towards conditions which are as yet unexperienced and unknown, the elements of uncertainty and speculation thus introduced properly exclude any undue dogmatism. This by no means detracts from the value and interest of the book ; indeed, it adds thereto. Even Dr. J. A. HADFIELD, who edits the collection and writes an "introduction," does not attempt to formulate any conclusions other than the very general one that "the function of psychology in modern problems is of considerable importance in establishing principles for the health of the individual, for the development of education, for the conduct of social and political life, and for the understanding of the human soul." That there can be no claim to a complete presentation of even one aspect of any of these subjects must be at once obvious ; that there is no finality in the main views expressed soon

[2] *Emotions and Bodily Changes. A Survey of Literature on Psychosomatic Interrelationships, 1910–1933.* By H. Flanders Dunbar, M.D., Ph.D. New York: Columbia University Press ; London: H. Milford, Oxford University Press. 1935. (Pp. 595. 25s. net.)

[3] *Psychology and Modern Problems.* By Morris Ginsberg and others. Edited by J. A. Hadfield, M.A., M.B., Ch.B. London: University of London Press Ltd. 1935. (Pp. 241. 5s. net.)

emerges ; but Dr. Hadfield is fully justified in regarding the book as an introduction to all these subjects, as suggesting important and serviceable lines of thought, as a stimulant to mind and imagination, and " as a gateway through which we may look at the country beyond, and, looking, be tempted to explore one or another of these rich provinces of thought."

In the several addresses or chapters Drs. Morris Ginsberg and C. G. Seligman deal with national character and racial differences ; Drs. Ramsay Muir and Crichton-Miller with questions of liberty and authority in the spheres of social and political organization, and of education respectively ; Dr. J. C. Flügel with certain psychological aspects of marriage ; Dr. Emanuel Miller with the tendencies of modern art ; and Dr. Matthews, the Dean of St. Paul's, concludes with an excellent and well-balanced consideration of some of the relations between psychology and religion, in which, incidentally, he deals very faithfully and effectively with certain recent vigorous but rather crude statements of opinion by Dr. David Forsyth. Readers will peruse these different pronouncements, as audiences heard them, with varying degrees of agreement, concern, or irritation ; but they are all stimulating and thought-arousing. They all, moreover, have (as the title of the book indicates) an immediate and direct bearing on many of the most important and intriguing questions of the present day ; and there can be no doubt that the organizing of this series of addresses by the Institute of Medical Psychology was well worth while, and that it was wise by this publication to make them easily available to a much wider public.

A BOOK ON BACTERIOLOGY

In *Principles of Bacteriology*,[4] a book of some 350 pages, Dr. A. A. EISENBERG and MABEL F. HUNTLY claim to present the essentials of bacteriology in simple language. Since the authors do not confine their attention to bacteria but include pathogenic fungi, protozoa, and parasitic worms in their survey the title of their book is incorrect. It is surely time that the use of the word bacteriology in this lax sense was abandoned. One gathers from the preface to the first edition that this book was designed mainly for the instruction of nurses. It may be that in the United States the hospital nurse is expected to acquire a considerable knowledge of those parasites which cause disease in man, much more than would be deemed necessary in this country, but surely it can serve no useful purpose for the nurse to acquaint herself with technical matters such as the preparation of culture media and the adjusting of their reaction, the staining of flagella and capsules, the typing of pneumococci, and the biochemical reactions of the colon-typhoid-dysentery group. All this and more is treated in this book ; even Ehrlich's side-chain theory and rough and smooth variation of bacteria have not been overlooked. No doubt there is much that is useful to the nurse in this book, and in some instances the presentation of the information has much to commend it. Unfortunately so many statements are ambiguous, overdone, or even incorrect that any good points are largely detracted from. On page 41 one reads:

> " The amoeba, when fully grown, is visible to the naked eye. It is invariably found in stagnant pools of water, and if taken into the system in drinking-water or food produces an acute intestinal disturbance accompanied by ulceration of the intestines and sometimes abscess in the liver."

It is true that the next sentence goes on to say that this refers only to the pathogenic form of amoeba, the so-called " *Entamoeba histolytica*," but even so the beginner reading this would almost certainly draw wrong conclusions. Then in the section devoted to fungi those causing ringworm are referred to as yeasts, and a sporotrichum—*S. schenki*—is described as a " cigar-shaped fungus." When discussing the distribution of bacteria—and by that is meant the way in which infection is spread—it is stated that: " Foods may also be contaminated in kitchen preparation and cooking by sick persons (those having tuberculosis or venereal disease form good examples) " ; this is a new variation on the theme of indirect spread of venereal disease. On the subject of the specific prophylaxis and therapy of diphtheria one reads that: " No one to-day realizes what diphtheria meant in former days: death was inevitable ; . . . there is absolutely no excuse for death from diphtheria to-day," and from the remarks on page 315 a doubt almost arises whether the authors themselves understand what the Schick test is. These are a few examples of the sort of thing to be found here and there throughout this book: they speak for themselves, and do not call for further comment.

[4] *Principles of Bacteriology*. By Arthur A. Eisenberg, A.B., M.D., and Mabel F. Huntly, R.N., M.A. Sixth edition. London: H. Kimpton. (12s. net.)

GENERAL HYGIENE

Professor MILTON J. ROSENAU's book is one of the larger American publications on hygiene which have attained considerable vogue in this country. In the sixth edition,[5] new articles have been introduced while others have been substantially recast. The new article on psittacosis exhibits the known facts in a compendious form. That on ringworm includes a note on epidermophytosis or athlete's foot, a condition which, it is stated, was found to affect 1,600 out of 3,000 freshmen at the University of California. The new chapter on puerperal sepsis is rather disappointing. It does not engage the problem closely. " Superlative antiseptic technic " is a counsel either of perfection or of despair. The revised section on venereal disease is written in general with proper feeling, and the paragraph on prostitution could scarcely have been better put, but we do not share the author's view that the transmission of syphilis by kissing is a subject difficult to treat without a sense of humour, and his citation, at page 470, of an alleged pronouncement by Madame de Staël seems rather flippant. The chapter on sex hygiene, also revised, summarizes the Freudian theory, and the author's opinion that the sex enlightenment of the young should be from the social rather than the biological standpoint is of much interest. There is a new and extensively illustrated chapter on contraception which will strike some readers as out of place in a work of this kind.

MORE THOUGHTS OF A PHYSICIAN

In *Endocrine Tumours and Other Essays*[6] Dr. PARKES WEBER has done well to expand and elaborate, as he so well can do, previous contributions scattered so far apart as the *Journal of Neurology and Psycho-pathology* and *The Numismatic Circular*. The present volume is a companion and continuation of that interesting collection of papers—*Some Thoughts of a Doctor*—published last year, but the subjects of the present twenty-one essays are more predominantly medical in tone. The last four, however, are in the attractive borderland between strictly medical and other problems—for example, the significance of the distorted skull in Holbein's picture of " The Ambassadors," which is regarded as a hidden *memento mori* emblem ; " pathological " money, " pathological " ornaments and adornments ; and two dealing with

[5] *Preventive Medicine and Hygiene*. By Milton J. Rosenau. Sixth edition. New York and London: D. Appleton-Century Company. (Pp. 1,481 ; 145 figures. 42s. net.)

[6] *Endocrine Tumours and other Essays*. By Frederick Parkes Weber, M.A., M.D., F.R.C.P., F.S.A. London: H. K. Lewis and Co., Ltd. 1936. (Pp. 207. 7s. 6d. net.)

dreams, the "stuff" they are made of, and the revelations they may make of innate savagery. These, like the other essays, eloquently demonstrate the wide scope of the author's knowledge and mental activity. The first article in the volume combines several recent contributions on the clinical manifestations induced by primary tumours of the endocrine glands, its thorough and up-to-date character being shown by nine and a half pages of references and bibliographical notes as a supplement to the thirty pages of text. This is followed by two essays on philosophical themes, the first of which, entitled "What is Disease?" was published this year; the other and much longer, on the classification of diseases, their nature, and some considerations of their rational treatment, now appears for the first time. The account of thrombo-angiitis obliterans (Buerger's disease) is interesting, as it reprints Dr. Parkes Weber's original description of the disease in 1908, before the appearance of Buerger's monograph. Many readers will look forward to a third such volume *with* an index.

Notes on Books

The 1935 Year Book of the Eye, Ear, Nose and Throat,[7] by BROWN, BOTHMAN, SHAMBAUGH, and HAGENS, is a handy volume containing a large number of judicious and well-arranged abstracts of current literature comprised in three sections. A number of articles have received notice which contain nothing in any way original, and might have been ignored as intended only for ordinary purposes of teaching, but taken as a whole it is a valuable epitome. The subgrouping has been carefully planned: thus tumours of the eye are grouped together under the iris and ciliary body. This is followed by abstracts of a large number of papers on the lens and cataract. This again is followed by the retina, and there are separate sections on surgery and on therapy. In the second section, on the ear, the papers again are suitably grouped. An important group of these papers is devoted to petrositis. In this section on the ear the pungent editorial comments are not the least valuable and informative part of the compilation. The final section, on the nose and throat, has also received thorough attention, and there is a good index. The scope of the book is so varied that it is impossible to give more than a general idea of its contents, and to say that, throughout, the work has been done conscientiously, and a high literary standard has been maintained. It should be most useful to specialists.

The Origins of Love and Hate[8] is the last contribution to psychological medicine from the pen of the late Dr. IAN SUTTIE, whose premature death was recorded in an obituary notice in these columns on November 2nd, 1935. Dr. Suttie's main thesis is to regard human life and development as motivated not by the purely sexual love upon which Freud and his disciples insist, but by a love which may be described as the craving for companionship. Tracing the evolution of the child, the author regards the maternal relationship as of paramount importance, again in contradistinction to the patriarchal system of Freud. Dr. Suttie has not hesitated to put forward an original conception of his subject, and he is a persuasive advocate. This book will evoke controversy in psychological circles, in which, unhappily, the author can take no part.

For its eighth edition CROSSEN'S *Diseases of Women*[9] has undergone very thorough revision. Thanks to the elimination of material which recent research has rendered obsolete, and to the careful rewriting of other sections, the book has not been unduly increased in size. The important points are presented throughout clearly and systematically, and there is an attractive typographical arrangement of the text with this end in view. One of the best chapters is devoted to anatomy and physiology; this includes a most concise and comprehensive survey of recent work on the endocrine control of the menstrual cycle. Such subjects as contraception and sexual frigidity are treated briefly and didactically, as might be expected in what is primarily a textbook. New lines of treatment, however, notably with regard to x rays and radium therapy, are dealt with very fully. There are brief sections on the medico-legal aspects of gynaecology and on the after-treatment of operative cases; and the authors give an excellent review of the lower intestinal tract in so far as that is concerned with gynaecology. The volume is lavishly illustrated, and maintains throughout the high standard which distinguished previous editions, both as textbooks and as works of reference.

The official *Medical Register* for 1936 has now been published.[10] It appears from the table printed in the introductory pages that 1,884 names were added last year—220 more than in 1934. New registrations numbered 971 in England, 509 in Scotland, 177 in Ireland, and 227 on the Colonial and Foreign lists. The total number of names on the *Register* at the end of the year was 58,363, representing an increase of 976. The number of names removed from the *Register* during 1935 was 1,057, compared with 959 in the previous year. Of these, 907 were deleted on evidence of death, 143 for failure to comply with the inquiries of the Registrar as to cessation of practice or change of address, and five were struck off under the disciplinary powers conferred by Parliament upon the General Medical Council. The average annual number of penal erasures during the past twenty years was five.

Preparations and Appliances

ASCORBIC ACID: VITAMIN C

British Drug Houses Ltd. have issued a convenient pamphlet on the uses of vitamin C. The identification of this substance as l-ascorbic acid and its consequent synthesis have resulted in its being available in pure form in any quantity needed, and hence its possible clinical uses are a matter of considerable interest.

This compound is probably an integral part of an oxidation reduction system and essential for the life of all cells, but at present its clinical uses are ill defined, except, of course, in cases of definite scurvy, which are nowadays uncommon. Large quantities of ascorbic acid are found in the adrenal cortex and in the lens of the eye, and the substance has been tried in Addison's disease and in cataract. In the former condition it reduces pigmentation, but it has no very certain effect in the latter condition. Ascorbic acid has been tried also in forms of disease associated with capillary haemorrhage, such as Henoch's purpura and haemophilia, and the reports are encouraging.

The general impression given by the reports summarized in the pamphlet is that ascorbic acid is in the future likely to prove an important therapeutic agent, but that knowledge regarding its clinical value is at present very imperfect.

A HAEMOSTATIC POWDER

"Clauden" (Luitpold-Werk, Munich) is an extract of lung tissue which contains thrombokinase. This substance has been used for many years as a local haemostatic, which can be applied in powder form to wounds. The manufacturers also claim that it is absorbed unchanged from the intestine and reduces the coagulation time when given by mouth.

In recent years the drug has been used intravenously for the purpose of reducing coagulation time, and a recent report[11] records that in a man discovered to be a haemophiliac after an operation a total of 210 c.cm. of clauden solution was given intravenously without producing any shock effects, and caused arrest of the persistent haemorrhage. The manufacturers supply a long list of references to recent articles recording the actions of this preparation. It is distributed in this country by Medical Laboratories Ltd., 40, Pall Mall, S.W.1.

[7] Chicago: Year Book Publishers; London: H. K. Lewis and Co., Ltd. 1935. (Pp. 638. 2.50 dollars, or 10s. 6d., postage 6d.)

[8] *The Origins of Love and Hate*. By Ian D. Suttie, M.D. With preface by Dr. J. A. Hadfield. London: Kegan Paul and Co. Ltd. 1935. (Pp. 275. 10s. 6d. net.)

[9] *Diseases of Women*. By H. S. Crossen, M.D., F.A.C.S., and R. J. Crossen, M.D. Eighth edition. London: Henry Kimpton. 1935. (Pp. 999; 1,158 engravings. 42s. net.)

[10] *The Medical Register, 1936*. Printed and published under the direction of the General Council of Medical Education. London: Constable and Co., Ltd.

[11] "Successful Surgical Operation on a Haemophiliac," by Lieutenant Dr. Cioran, *Wien. med. Woch.*, 1935, No. 38

British Medical Journal

SATURDAY, MARCH 28th, 1936

PROPRIETARY REMEDIES

Proprietary remedies continue to excite more caustic comment than approbation. In many cases the products themselves are at fault, but the antagonism is often provoked by faulty presentation. Advertisement and copy writers as a class, having only a limited understanding of scientific matters and medical modes of thought, easily create false impressions without having any desire to deceive. In his article in to-day's issue Dr. E. W. Adams deals with other aspects—namely, medicinal shortcomings and brazen attempts at obfuscation. He justly pillories the impertinent use of the phrase "the safe brand" in connexion with official preparations such as acetylsalicylic acid, the purity of which is sufficiently guaranteed by the law and the *British Pharmacopoeia*. Yet this kind of persuasion is practised even by firms who are merely owners of registered names under which they sell drugs purchased in the open market. Dr. M. E. Shaw[1] has recently stated that "doctors as a class are far too willing to accept as proof evidence of the most exiguous character." Such a trait is inevitable in men who must combine each in his own person the trinity of artist, scientist, and craftsman. Unfortunately it makes them easy prey for the single-purposed business man. New chemical entities, devised with actions to imitate or allegedly surpass those of drugs already in use, are often offered first as proprietaries. They may be molecular modifications achieved by the chemist, or concoctions of odd materia medica rescued from obscurity to earn dividends. Other proprietary medicines are simply mixtures of well-known substances, with little or no essential modification. Their novelty may rest in the use of some private extract, described, for example, as the "laevorotatory alkaloids of belladonna," for which anyone with a working minimum of medical knowledge would use hyoscyamus.

The essentials of each genuinely new substance could fitly be scrutinized by some official body before it is made available for general prescription. The present practice of utilizing the trusting public for large-scale therapeutic trials of new drugs is to be deprecated. Disaster has often followed the adoption of this course. Drugs which have passed exacting toxicity tests without stigma may reveal unfortunate idiosyncrasies when used by a whole community. The blindness which followed in the train of ethyl hydrocupreine, the specific bactericide for the pneumococcus, is a case in point. The fatal acute yellow atrophy of the liver seen from time to time after the use of cinchophen, and after almost every derivative of cinchophen which has been evolved and used extensively, furnishes another warning. Responsibility for fatal malignant neutropenia has recently been fastened on to amidopyrine. Dr. Adams[2] has pointed out that amidopyrine, which was first issued under a trade mark, became an important component of many subsidiary proprietary remedies, amongst which he mentions not only so-called ethical preparations but also a popular nostrum. He surveys, too, a number of the ovarian and kindred hormone products which have begun to flood the market. It is already known that certain members of the series are closely allied chemically to cancer-provoking substances, a fact of sinister foreboding.

In the midst of such a maelstrom of new material as commerce now provides it is easier to scoff ignorantly or use blindly than to select with discrimination, and it is becoming increasingly apparent that medical education in the cognate subjects is inadequate. In fact, as was recently observed by one of the State medical examining boards in America "the manufacturing chemists and pharmacists are now providing the materia medica and pharmacology for the medical profession."[3] Such post-graduate education by interested companies is inevitably one-sided, and sometimes deliberately subversive. The publicity costs of manufacturers and agencies selling through the doctor run into hundreds of thousands of pounds yearly for printing and postage alone, a fact which can be readily deduced from the literature pouring daily into the 40,000 letter-boxes of the profession. Such expenditure can only be justified commercially by the sales which it promotes. Clearly, then, post-graduate education organized by financially interested parties is indeed influencing the profession profoundly. Its effects are to be seen in the development of what in America is called medical nihilism, by reason of which proprietary remedies are ordered in increasing proportions and the careful prescription of official substances steadily declines. Such statistics as are available indicate that about one-half of the total prescriptions of private practice are for proprietary drugs, and that the younger men are the ones most addicted to the practice. The habit may occasionally result from a doctor's distrust of drug therapy as a whole and his desire to give a new placebo with which the patient is still unfamiliar. Sometimes it suggests a primitive subconscious surrender to the mystic appeal of the unknown, but usually it would seem to arise from an imperfect knowledge of the art of prescription-writing. Reform and some system of control are urgently needed.

The compilation of a directory of proprietary remedies would be a useful early measure. This should be more than a schedule of drugs of well-warranted individuality, because such a list is already published annually by the American Medical Association under the title of *New and Non-Official Remedies*. Every preparation with a separately registered name sold in

[1] *British Medical Journal*, March 14th, 1936, p. 515.

[2] Reports on Public Health and Medical Subjects, No. 76. 1935. H.M. Stationery Office.

[3] Davis, Norman A.: *Journ. Amer. Med. Assoc.*, 1936, p. 405.

Great Britain should be included in the new volume, so that comparison can be made between the authentic and the dubious. Co-ordinating monographs would resolve the confusion arising from the use of long chemical descriptions and formulae. If indexed in a practical manner for ready reference by the average doctor and brought up to date once or twice a year, everyone would feel justified in refusing to prescribe a new proprietary substance until it had been placed in correct perspective in the directory. The practitioner would preserve his scientific sanity and protect his patients without depriving them of any material benefit.

For the undergraduate, salvation lies in the greater provision of directly vocational training in our medical schools. The student should be taught how to handle chemical tools with confidence, utilizing their powers while acknowledging their limitations. From this point of view the modern tendency to relegate the teaching of pharmacology to the academic physiologist is retrograde unless instruction is reinforced by a far more comprehensive course in applied pharmacology during the student's clinical period. Such instruction given systematically by physicians engaged in active practice would prepare the way for the more desultory teaching of practical therapeutics as applied to individual patients and diseases.

If clinical observation and the study of pathology are informed by a sufficient acquaintance with the impressive array of official and non-proprietary unofficial curative agents which are available the prescription of registered proprietaries should steadily diminish. Although retaining an important place amongst our therapeutic reserves they need only be encouraged when representing genuine scientific advance. That some of them do come within this definition is a matter of common knowledge ; and it would be ungenerous to end our survey without a word of recognition and gratitude for the research work, chemical and biological, carried out in the laboratories of leading firms of manufacturers—work that has given to therapeutics many valuable weapons now in daily use.

THE MEDICINES AND APPLIANCES (ADVERTISEMENT) BILL

As far back as 1904 the *British Medical Journal* began to analyse some of the so-called remedies which were at that time being thrust upon the notice of the public, and published the results obtained in its own columns ; and when, later, a book containing a collection of the analyses—together with notes as to the light they threw on the claims made by the vendors of the medicines considered—was published by direction of the Council of the British Medical Association under the title *Secret Remedies*, it excited widespread interest among the general public and obtained an enormous sale. Nor was this the only step taken by the Association, for about a year after the publication of the analyses of patent medicines began, study of the subject from other points of view was undertaken at headquarters, and as a result of these two factors the Representative Meeting of the Association in 1906 passed a resolution in favour of the promotion of legislation and suggested the form that it should take. Thenceforward the Association in each successive year gave further attention to the subject.

The history of the attempt in this country to remove the worst abuses of the unrestricted freedom to advertise patent medicines and appliances may be said to have begun with the appointment by the House of Commons in 1912 of the Select Committee on Patent Medicines. That committee included in its report recommendations which, if adopted, would protect the public against the fraudulent advertiser by establishing an effective control of the sale and advertisement of patent medicines and appliances. Unfortunately, the report was published just after the outbreak of war, and it therefore received comparatively little attention. The extensive evidence given by a large number of bodies and persons with special experience of the subject revealed a deplorable position, which the committee summed up in the following words:

> "For all practical purposes British law is powerless to prevent any person from procuring any drug or making any mixture, whether potent or without any therapeutic activity whatever (so long as it does not contain a scheduled poison), advertising it in any decent terms as a cure for any disease or ailment, recommending it by bogus testimonials and the invented opinions and facsimile signatures of fictitious physicians and selling it under any name he chooses with payment of a small stamp duty for any price he can persuade a credulous public to pay."

The position is not much better to-day. Since 1914 the Venereal Diseases Act, 1917, has prohibited the sale and advertisement of remedies for venereal diseases ; certain substances have been added to the number of scheduled poisons ; and Regulations under the Dangerous Drugs Acts of 1920 to 1925 have subjected the import, manufacture, and sale of opium, cocaine, and their derivatives to drastic restrictions. The Therapeutic Substances Act, 1925, restricts the manufacture, sale, and import of certain substances, the purity or potency of which cannot be adequately tested by chemical means. With these exceptions the legal position remains substantially the same as in 1914. The recommendations of the Select Committee included suggestions for a scheme of Government control which can still be offered as a practical means of preventing the appearance of fraudulent or misleading advertisements. The nature of the proposed scheme has often been referred to in detail in these columns. The report and its recommendations were warmly welcomed by those persons and bodies who realized the pernicious effects of the absence of control, and it was hoped that after the war the necessary legislation would be introduced to give effect to the drastic changes that the Select Committee proposed. No general measure of control, however, has as yet been established, and the Bills of 1920 and 1931 proposing a partial control failed to become law. Yet that a full scheme of control

would be practicable and effective is illustrated by the success of the Canadian Act.

In the meanwhile those who have the matter at heart have not been inactive, and much quiet but valuable educational work has been done. The British Medical Association, whose vigorous campaign against the fraudulent advertisement of patent medicines and appliances began in the early years of this century, has endeavoured by publicity, by bringing pressure to bear upon newspapers and periodicals, by giving advice on advertisements referred to it, and by its support of legislative proposals, to bring home to the public and to the advertising media the very real dangers of the encouragement of self-diagnosis and self-treatment. In 1924 a non-medical body, the Publicity Club of London, which represented the largest advertising club in Great Britain, held a meeting which recorded its opinion that the condition of the law in regard to patent medicine advertising called for immediate reform, and it urged the introduction of legislation along the lines of the recommendations of the Select Committee of the House of Commons in 1914. As a sequel to this meeting machinery was created by the Advertising Association for the examination of advertisements of an undesirable type submitted for publication in the Press. Many of the more reputable newspapers and periodicals have found this advisory service of great value in enabling them to keep their columns free from objectionable advertisements. But the results of such voluntary efforts at control are necessarily limited, and the need for legislation is as urgent now as it was in 1914. Only a system of control imposed by the authority of Parliament can completely eliminate the fraudulent advertiser. Certain bodies, working under the auspices of the Parliamentary Committee on Food and Health, therefore determined to prepare a Bill on such lines as would be acceptable to most of the interests involved, and after several years' patient labour a Medicines and Surgical Appliances (Advertisement) Bill has been introduced and is now before the House of Commons.

The Bill proposes to "prohibit the holding out of medicines, surgical appliances or treatment as effective in relation to certain ailments, and the publication of invitations to diagnosis or to the treatment of certain ailments, by correspondence, and for purposes incidental thereto." It must be made quite clear that the prohibitions of the Bill extend only to certain types of advertising. Under its provisions it would be unlawful "to hold out" in any public place medicines or appliances for the following purposes:

(*a*) For the cure of Bright's disease, cancer, consumption, diabetes, epilepsy, fits, locomotor ataxy, lupus, or paralysis, or for preventing any of those ailments or for producing any beneficial effect with respect to the course of any of those ailments;

(*b*) For the cure of amenorrhoea, hernia, blindness, or any structural or organic ailment of the auditory system;

(*c*) For procuring the miscarriage of women;

(*d*) For the cure of habits associated with sexual excess or indulgence, or of any ailment associated with those habits, or for the promotion of sexual virility in men or of sexual desire in women.

Advertisements that would otherwise be illegal may be directed to doctors, dentists, nurses, pharmacists, hospitals, and persons carrying on a business including the practice of medicine or dentistry or the supply of medicines or appliances. Advertisements of articles of diet or courses of diet, so long as no claim for cure is made, are allowed in respect of ailments mentioned under (*a*). Invitations to correspond with a view to diagnosis or treatment by correspondence may not be issued by the proprietor or distributor of a medicine or appliance or by a person who administers treatment.

Those who wish to see introduced the ideal scheme of control suggested by the Select Committee willingly support this extremely mild measure because they feel that some step, however small, in the direction of control ought to be made at the earliest possible moment. They hope that perhaps by means of piecemeal legislation the benefits of control will gradually be appreciated, and that a complete scheme might eventually become acceptable to all concerned.

MASTITIS STREPTOCOCCI IN RAW MILK

Those who are interested in the purity of our raw milk supplies will do well to take notice of a recent paper by Mr. E. J. Pullinger[1] on the frequency of mastitis streptococci in different types of milk. Mr. Pullinger, who is working at the Research Institute of the Royal Veterinary College, London, has already made a number of valuable contributions to our knowledge of the presence of tubercle and *abortus* bacilli in graded and ungraded milk. The present paper describes the results of examining Certified, Grade A (T.T.), and non-graded milk for β-haemolytic mastitis streptococci. The cultural method was found to be the most delicate and reliable index of the presence of these organisms. Of forty-two samples of Certified milk from sixteen producers, twenty-four were found to be infected. Twelve of these herds were examined on three occasions during fifteen months, and samples from only two of them were free from β-haemolytic streptococci at every test. Similar results were yielded by Grade A (T.T.) milk. Of fifty-four samples from twenty-four producers forty-two were infected, and of fourteen herds examined on three occasions only two were found to be free at every test. In ordinary rail-tank milk mastitis streptococci, as was to be expected, were demonstrated in every one of fifty-eight samples, but after pasteurization by the official holder method these organisms were found to be completely destroyed. It would appear, therefore, that even the two highest grades of raw milk are frequently, and sometimes heavily, infected with β-haemolytic streptococci. This is a revelation as unfortunate as it is surprising, and taken in conjunction with the frequency of *Br. abortus* in the same grades of milk it cannot fail to cause serious reflection. The desirability in the farmer's interest of controlling tuberculosis, contagious abortion, and mastitis is unquestioned. These diseases constitute major agricultural problems whose solution will demand all the resources of veterinary medicine. There is ample evidence that by careful attention to technical and other considerations

[1] *Journ. Dairy Research*, 1935, vi, 369.

each of these diseases can be eliminated by the so-called eradication method, and it is to be hoped that agricultural and veterinary advisers will do all in their power to encourage owners to free their herds from infections which have such a deleterious effect both on the general health of the animals and on their milk supply.

THE SPLEEN

In a monograph entitled *The Spleen and Resistance*,[1] by Perla and Marmorston, a great deal of information which was formerly to be obtained only by reading large numbers of original papers is presented in a concise and digestible form. Investigation of splenic function in relation to infection had a very wide vogue, which reached its zenith only a short time ago. It appeared a simple problem, and certain experimental methods obviously suggested themselves which seemed bound to give a direct answer. Either the spleen was removed or its phagocytic cells and those of the reticulo-endothelial system generally were supposedly put out of action by saturating them with inert material introduced into the circulation and removed by these cells by phagocytosis. These proceedings were followed either by the injection of some antigen, when the rate and extent of antibody production were subsequently studied, or by the inoculation of the animal with living bacteria or protozoa. In the latter event the course of the subsequent infection was the criterion of diminished capacity for resistance. The simplicity of this experimental method is only apparent. In reality its results are indefinitely variable according not only to the method and reagents used, but more particularly to the anatomical and other peculiarities of the animal chosen. What general conclusions can be drawn from the accumulated mass of work of this kind are ably set out in this book in terms that are unlikely in the present state of knowledge to encounter contradiction. Other chapters deal briefly with the anatomy of the spleen, changes to be observed in the spleen in a large variety of infections, and compensatory changes found elsewhere in the body after splenectomy. There is a bibliography of 447 references, and the fact that this is very far from being complete will give some idea of the volume of literature which this subject has produced. A short introduction by Dr. David Marine serves, apart from its primary purpose, to remind us that the word "infectious" has a different connotation in the United States from our own. Perhaps some of our transatlantic friends will tell us why, when the words "infectious" and "infective" have long existed with precise and different meanings, they decline to use one of them, and abuse the other by employing it in two different senses?

MEDICAL STUDENTS THEN AND NOW

Early Victorian literature has given us two pictures of the medical man in the making. Both are amusing, both are highly coloured, but both contain a sufficient element of truth to show how far we have travelled from the customs and mode of thought they represent. Albert Smith, himself a member of the Royal College of Surgeons, though he became a professional entertainer, published in 1841 *The London Medical Student*. He tells the story of Mr. Muff, his life and adventures from the time he first came to London and visited Evans's until, thanks to "The Grinder," he succeeded in "flooring" the examiners at the Apothecaries' Hall, and how he spent the night after the examination. Charles Dickens in *Pickwick Papers* (the one-hundredth anniversary of which will be celebrated next week) carries us a little farther and with a slightly different type. Bob Sawyer and Ben Allen are more intelligent, and have passed their examinations with less difficulty than Mr. Joseph Muff. But they breathe the same spirit of devotion to their profession and live in an atmosphere of boisterous joviality. The story of the Middlesex Hospital Medical School which Dr. Campbell Thomson wrote last year as a centenary volume gives an account of the life of a student at a time when travelling facilities were few and expensive and the examinations were at long intervals apart. There was no accommodation provided by the hospitals for their pupils. Coming straight from country homes and for the most part poor, they congregated in third-rate lodgings, were obliged to get their meals in public-houses, played billiards because they had not the money to go into the country, and took their pleasure at Cremorne or Highbury Barn after a visit to their "Uncles." Many became dissipated and useless; the wonder is that all did not go to the bad and that the bulk of the profession remained clean-minded, honest, and God-fearing. The change came about in the early sixties of the last century. The licensing bodies increased the number and stringency of their examinations: the medical schools began to superintend the instruction of their students, provided them with resident quarters, and appointed deans to look after them. Sobriety became the rule rather than the exception, and a few years later tea-shops and cafés became numerous.

NEW RADIUM TECHNIQUES

Mr. H. S. Souttar brought forward two interesting devices for use in radium application at a meeting of the British Institute of Radiology on March 19th, supplementing the paper he read at Melbourne which appeared on our issue of February 29th. One of these is a mechanism by which the radium is automatically, by pneumatic pressure through a flexible tube, conveyed to and from the applying apparatus, so that the operator may work in safety and the radium remain at a distance until actually required. At the end of the flexible tube is a cylinder of lead 16 cm. in diameter, with a conical cap for convenience of application. The radium, contained in a bobbin with rounded ends, is conveyed by the tube to a curved canal running through the movable portion of the unit, and the unit itself has a gimbal mount for easy adjustment to the patient. The radium when not in use lies in a safe fully protected by lead and outside the treatment room. When required for treatment air pressure is applied to drive it along the flexible tube and into the unit, where its arrival is indicated by the lighting up of a small electric lamp. On reversing the two-way valve the air in the system is exhausted and the bobbin runs back along the tube to its safe. Therefore the whole adjustment of the apparatus can

[1] *The Spleen and Resistance*. By David Perla, M.D., and Jessie Marmorston, M.D. London: Baillière, Tindall and Cox. (9s.)

be carried out in the absence of the radium, which can instantly and accurately be brought into position when the treatment is begun. Mr. Souttar also indicated a further development of the principle, pointing out that the principle of pneumatic transference made it possible to use with safety units of very small dimensions, but containing large quantities of radium. He exhibited an apparatus which was small enough to be introduced into the mouth, and the aperture placed in contact, for example, with the tonsil, the radiation being so intense that a very short exposure sufficed. The body of this unit consisted of a rounded cylinder of platinum 3 cm. in diameter and 5 cm. long. Mr. Souttar further addressed the Institute on the construction of radium plaques. There were problems in connexion with plaques, he said, a complete mathematical solution of which was impossible, but a sufficiently accurate solution for clinical purposes, requiring only simple calculations, could be reached. The first problem was to distribute the radium on the surface of the plaque so that all the points within the tissues at the same depth from the surface would receive the same radiation. If the radium were distributed uniformly over the surface of the plaque points in the centre of the field would receive a much larger radiation than at the periphery, but if the radium were divided into two equal portions, one of which was distributed around the margin of the plaque and the other uniformly over its surface, a remarkably uniform field resulted, with contours which were almost flat over the whole area under treatment. This arrangement of the radium had another advantage, for the drop in intensity with distance from the surface of the plaque was equally reduced. Instead of falling off as the inverse square of the distance, over a considerable region the intensity diminished only as the inverse square root, giving an increase in the depth dose. A more difficult problem was to calculate the quantity of radium so distributed that was required to produce a certain radiation at a given depth from the surface of the plaque. Mr. Souttar here exhibited the small instrument he has devised to facilitate this calculation. Like many other small pieces of apparatus it is simpler in use than in description.

SOCIETY FOR THE PROTECTION OF SCIENCE AND LEARNING

In our last issue we printed (p. 607) a letter from Lord Rutherford announcing the formation of a Society for the Protection of Science and Learning to take over part of the work of the Academic Assistance Council. The Council was formed as an emergency organization three years ago and handled with conspicuous wisdom a most difficult situation. Without pandering to a popular craving for sensational accounts of wrongs done by foreigners, it made the tragedy of the position clear. Of some 700 scholars who left Germany alone more than half have already been permanently established elsewhere and in a way which did not prejudice the just claims of others. The Council is to be congratulated on a fine piece of work. It is, unfortunately, clear that the task is not completed, and that for years to come some machinery for helping the victims of intellectual persecution in many parts of the world will be required. That is the reason for establishing a new society, and a compelling reason. We have no doubt that the society deserves and will receive the generous support of members of our profession.

AIR RAID PRECAUTIONS

Under the terms of the Home Office, Air Raids Precautions Department, circular letter of July 9th, 1935, and the memorandum No. 1 of 1935, the Order of St. John and the British Red Cross Society were asked, and have agreed, "that their organizations will so far as practicable be placed at the disposal of both central and local Governments to supplement official resources." Furthermore, it was suggested that local authorities (upon whom the main task of the general organization of this work of air raids precautions is laid) should consult with the Order and the Society upon such matters as come within their respective provinces. The St. John Ambulance Brigade has issued a special order to its divisions all over the country making provision for: (1) training of instructors; (2) training of existing rank and file of the Brigade; (3) training of the general public as an auxiliary reserve. The British Red Cross Society through its county branches is doing the same. Already over 900 officers of the Brigade, including a large number of medical men from all parts of the country, have been trained at intensive courses of instruction in London, and many of them, having obtained their instructors' certificates, are conducting classes in the provinces both for those connected with the St. John Ambulance Brigade and for the general public. The British Red Cross Society has many hundreds of officers who are also qualified to instruct. The demand for these trained men and women is rapidly increasing as the medical officers of health of boroughs and urban districts have been officially advised to organize first aid and decontamination posts in their areas, the personnel of which will be voluntarily supplied by these trained members of the Brigade and the Society. Examinations for these students are conducted by the two bodies, who issue certificates of efficiency and hold subsequent examinations to ensure continued efficiency in the work.

We regret to announce the death in his 82nd year of Dr. Arthur Shadwell, F.R.C.P., who had long been connected with the *Times*, first as a special correspondent on epidemics and other health matters, and later as an investigator of social problems.

Sir James Walton will deliver the Annual Oration before the Medical Society of London on Monday, May 11th.

The fourth International Congress for Experimental Cytology will be held in Copenhagen from August 10th to 15th. The subjects for discussion are physical chemistry of the cell, histochemical problems and cell metabolism, experimental morphology, electrophysiology of the cell, and experimental cell pathology and biology of irradiation. On Saturday, August 15th, there will be excursions and visits to research institutes. The congress fee is twenty Danish crowns. Those who wish to attend are asked to notify the secretary, Dr. Harald Okkels, before May 1st. His address is: Institute for Pathological Anatomy, 11, Frederik 5' Vej, Copenhagen, Denmark.

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some diseases of the digestive system met with in general practice.

CARCINOMA OF THE STOMACH

BY

THOMAS HUNT, D.M., F.R.C.P.

In England carcinoma of the stomach accounts for about one-fifth of all deaths due to cancer over the age of 40 ; it is most frequent over this age, and the ratio of men to women affected varies between 3 to 1 and 2 to 1. The majority of growths of the stomach occur at the pylorus, though the cardia is not an uncommon site ; the leather-bottle stomach is rare.

Although statistics and opinions differ on the point, there is no doubt that at least some proportion of cases of carcinoma of the stomach arise on the basis of either chronic gastric ulcer or gastritis. In my own experience the proportion is high, and many authorities, notably Hurst, are of the opinion that cancer never develops in a previously healthy stomach. Certainly a number of cases—perhaps one-half—occur in patients who have had for many years symptoms of recurrent dyspepsia. In view of this association of cancer with ulcer and gastritis, an important line of treatment lies, first, in the prevention of those factors which so far as we know give rise to these conditions ; and, secondly, in the early and thorough treatment of them when they have developed.

Symptoms of dyspepsia should demand not only full investigation, but careful inquiry into habits of eating, hurried meals, insufficient mastication, over-smoking, unsuitable food and drink (including alcohol), and in young patients correction of any such errors that may be discovered. Oral and nasal sepsis and chronic constipation should also receive attention. Such measures taken before the age of 30 may do much to prevent the occurrence of at least a proportion of cases of carcinoma of the stomach.

Early Diagnosis

The third line of treatment depends upon early diagnosis ; unfortunately almost half of the patients do not consult their doctor until the growth is already inoperable. The possibility of carcinoma of the stomach should be considered in any doubtful case of indigestion, particularly in patients over 40 years of age. The most frequent initial complaint is of fairly constant discomfort in the epigastrium, made worse by eating but not entirely disappearing between meals ; with this there is disinclination for food, flatulence, and nausea: severe pain, vomiting, and loss of weight are early symptoms in not more than 25 per cent. of cases.

A history of many years' duration of symptoms is no proof that malignant disease is not present, whilst any marked alteration in the symptoms should make the suspicion of growth more definite. A change from intermittency to constancy of the pain or of discomfort, the onset of partial or complete anorexia, an increasing lassitude and exhaustion, the appearance of symptoms of anaemia, such as dyspnoea or slight oedema, all suggest the possible onset of malignant disease. The presence of definite anaemia and cardiac weakness in an elderly patient must not distract attention from the digestive system ; recurrent phlebitis is not a rare early accompaniment of cancer of the stomach, and may even be marked enough to justify the name of thrombophlebitis migrans.

Actual wasting is usually a later symptom, but a slightly cachectic facies may give early indication of serious disease. A low fever usually indicates the presence of either a big growth or metastases in the liver. Severe vomiting may be due to pyloric obstruction, in which case the vomit is usually large in amount—often 2 to 3 pints ; it may be foul-smelling and dark from the presence of blood, and may contain particles of food eaten many hours previously. Such vomiting tends to occur at intervals of from twelve to forty-eight hours, and usually affords considerable relief to the patient.

In the early diagnosis of carcinoma of the stomach such symptoms and the general appearance of the patient should carry more weight than the physical signs. The majority of cases in which a tumour can be felt on palpation of the abdomen are already inoperable, although size alone of the growth is no certain indication as to operability or the presence of metastases. A large growth of the body of the stomach may remain localized for a long time, whilst a small pyloric growth, which at no time becomes palpable, may first show itself by the presence of secondary deposits in the liver or lungs. Palpation of the abdomen in the upright position may sometimes enable one to feel under the costal margin a small growth which cannot easily be detected by examination in the horizontal position.

Radiological Investigation

If any suspicion of carcinoma of the stomach exists, radiographs of the stomach after a barium meal should be taken without delay. The great majority of growths can be detected by skilled radiology even in an early stage. Bad *x*-ray films, on the other hand, may fail to demonstrate quite an advanced growth, and if clinical suspicion is strong no hesitation should be felt in advising further *x*-ray examination at more expert hands. In a number of cases a suspicious area may be seen on screen and film examination, although a definite opinion as to the presence of growth cannot be given. In such patients the stools should be tested on three or four occasions for occult blood, and if possible the *x*-ray examination should be repeated in two or three weeks' time.

If occult blood is present in the stools and the gastric radiographs still show any suspicious abnormality of contour, impaired peristalsis, tenderness on screen palpation, or doubtful filling defect, exploratory laparotomy should be urgently recommended. Where a large gastric ulcer crater is demonstrated radiologically, evidence of possible malignant change, in the shape of fixation or irregularity of outline, should be regarded as a definite indication for treatment by partial gastrectomy rather than by medical measures.

Differential Diagnosis

A test meal should be carried out in any case in which the *x*-ray diagnosis is indefinite, particularly in those with a long history. Complete absence of free hydrochloric acid is highly characteristic—though not pathognomonic—of gastric carcinoma. The presence of free hydrochloric acid either in the vomit or in the test meal must, however, never be allowed to exclude a diagnosis of carcinoma. Where the distinction from a purely nervous condition is in doubt, the red cell sedimentation

test is simple to carry out, and, if positive, points with a great degree of certainty to an organic cause for the symptoms.

Carcinoma of the stomach has to be differentiated from other causes of indigestion. Of these peptic ulcer has already been mentioned ; gall-bladder disease is the most frequent cause of indigestion beginning after the age of 45, but occurs more often in women than in men ; attacks of right-sided pain, excessive flatulence, and a more definite relation of pain to meals, together with some tenderness over the gall-bladder on palpation, suggest this diagnosis, but a cholecystogram is often essential to establish it. A purely nervous indigestion is not uncommonly associated with considerable loss of weight, anorexia, nausea, and exhaustion ; I have observed this especially in men on retirement from active work. Only the fullest investigation to exclude organic disease justifies this diagnosis, especially when it is remembered how rapidly nervous symptoms may become superimposed upon organic disease.

Genito-urinary dyspepsia, secondary to prostatic enlargement, may simulate closely gastric carcinoma, but can usually be diagnosed by inquiry as to urinary symptoms and by rectal examination. Carcinoma of the colon can be distinguished in most cases by a careful history as to bowel irregularity, lower abdominal discomfort, colic, and blood and mucus in the stools ; carcinoma of the oesophagus by dysphagia and the immediate regurgitation of food.

Chronic toxic gastritis, which may arise from severe oral sepsis, alcoholism, or after acute illnesses such as influenza, as a rule can be diagnosed with certainty only after exclusion of carcinoma by careful radiography. A satisfactory response to medical treatment is not a reliable guide in these cases, since a similar improvement may take place for a time in cases of malignant disease. Pernicious anaemia should be remembered as sometimes giving difficulty in diagnosis, and a full blood count should be carried out ; indigestion is not so marked in these patients, and loss of weight and anorexia are often absent. When an abdominal mass is palpable, or ascites has appeared, the diagnosis has to be made from other forms of malignant disease, ovarian cyst, cirrhosis of the liver, or tuberculous peritonitis.

Operative Treatment

The only hope of effective treatment lies in early and radical operation, since at present deep *x*-ray or radium treatment offers very little chance of cure. Unfortunately, even in early cases, partial gastrectomy with removal of neighbouring glands does not give a proportion of five-year cures of more than 10 to 15 per cent. The average immediate operative mortality lies between 5 and 30 per cent. Palliative gastro-enterostomy has nearly as high an operative mortality, and the average duration of life after operation is not more than six months.

Operation may be advised either in the hope of radical cure or with the object of relieving pyloric obstruction. In general, surgery is contraindicated if hard glands can be felt in the neck or axilla, if the liver is enlarged from the presence of metastases, or if there is ascites or jaundice. Severe anaemia due to chronic bleeding from the growth, heart failure, or severe wasting makes the operation more dangerous, but does not contraindicate it.

Vomiting from pyloric obstruction is an indication for operation (palliative gastro-enterostomy, or, if possible, resection) unless the patient's general condition is too bad. Much, however, can be done to improve the patient's condition before surgery is undertaken, and if this can be achieved he should be given the benefit of abdominal exploration, even in a case of doubtful operability. If there is pyloric obstruction, gastric lavage should be carried out for a week or more before operation. If possible, the large-bored rubber tube should be used, but if the swallowing of this is badly borne the small Ryle's tube may be used instead, and the gastric contents drawn off with a syringe. After withdrawal of the stomach contents five or six ounces of a 5 per cent. solution of sodium bicarbonate should be injected into the stomach and withdrawn, after which a further five ounces may be injected and allowed to remain ; this procedure should be carried out once or, in severe cases, twice a day. If the patient is dehydrated, as shown by a dry, inelastic skin, parched tongue, and low blood pressure, rectal salines, containing two ounces of glucose to the pint, should be given six-hourly in volume of 15 to 20 ounces. Before operation a blood transfusion should be given if the haemoglobin is below 60 per cent. The patient's blood should in any case be grouped, so that an immediate transfusion may be given later if necessary, and if possible suitable donors can be chosen and warned to be in readiness if required.

Symptomatic Treatment

The main symptoms requiring treatment are pain and loss of strength. For both of these a diet similar to that given in gastric ulcer may for a time bring improvement. Regular two-hourly feeds of 5 ounces of egg-and-milk, malted milk foods, arrowroot, vegetable cream soup, with the addition of glucose, custard, jelly, junket, a few rusks, sponge fingers, and plain biscuits, may be tried.

If there is pyloric obstruction fluids must be given per rectum, and the diet may more satisfactorily be drier ; it should include pounded fish, chicken, toast, and lightly boiled eggs, but in these cases little can be done by dietetic measures unless gastro-enterostomy is carried out. In cases in which all attempts at relieving the symptoms and distaste for food by diet are unsuccessful, the patient should be allowed a free choice. For those who can afford it champagne in small amounts is sometimes well taken.

For the gastric discomfort a dyspeptic mixture such as the following, containing a mild antiseptic, may be prescribed four times a day:

℞	Sod. bicarb.	gr. xvj
	Ammon. carb.	gr. j
	Glycothymolin.	♏ xx
	Ol. menth. pip.	♏ j
	Inf. gent. co.	ad ʒ ss

If there is restlessness and insomnia 10 grains of sodium bromide may be added to this mixture, and if pain is pronounced nepenthe, 10 minims, or tinct. opii, 10 to 15 minims, may also be included. Acid-pepsin mixtures are often badly tolerated, in spite of the frequent absence of hydrochloric acid in the stomach, and alkaline preparations are usually more successful in relieving distension and discomfort. The simple alkaline powders such as the following may be tried:

℞	Bismuth. carb.	1 part
	Mag. carb.	3 parts
	Calcii carb.	3 ,,
	Sod. bicarb.	3 ,,

Ft. pulv. One to two drachms three-hourly in milk or water.

When there is marked anaemia, ferri et ammon. cit. in 30-grain doses may be given in milk, and a course of injections of one of the liver extracts intramuscularly will, in a few cases, improve the blood picture ; these may be ordered in the form of campolon (Bayer) 2 c.cm., and given every second day. In some cases a dose of luminal (1/2 grain) may relieve the nausea, or a cachet of chloretone (5 grains) may be tried. The simple tablets

of aspirin (5 grains), phenacetin (5 grains), and caffeine (2 grains) will often relieve pain sufficiently to avoid the use of morphine or heroin for a time.

Carbromal (adalin), 10 to 20 grains, at night is worth a trial to procure sleep. If these simpler measures fail, there should be no delay in prescribing stronger drugs. Morphine, 1/4 grain, should at first be given by mouth as a tablet, or in a suppository, rather than hypodermically, but if this increases sickness one of the proprietary substitutes, such as dilaudid (tablets 1/24 grain), may be tried orally. The combination of omnopon, 1/4 grain, and scopolamine, 1/200 grain, is often more effective, given hypodermically, than either morphine or heroin alone. The dosage has usually to be increased gradually, but a change from morphine to heroin may often enable smaller doses of the latter to be continued with success.

Local applications in the form of poultices or warm pads to the epigastrium are often successful in giving some temporary relief. If there is severe constipation it is best relieved by simple enemata. Severe gastric haemorrhage is not common in cases of carcinoma of the stomach, but when it occurs should be treated along the customary lines for haematemesis.

Conclusion

In conclusion, the mental outlook of the patient and his relatives must be carefully studied from the outset. The true nature of his illness should be kept from the patient, and it is justifiable to give him the diagnosis of gastric ulcer. The relatives should, however, be told at once of any suspicion of growth, and informed exactly as soon as the diagnosis is sure. The prospects of surgery should be fully explained to them. The decision to tell the patient of his condition should never be made without consultation with his wife or relatives. When once the outlook is hopeless it is the doctor's duty to minimize expensive measures which he may know are doomed to cause disappointment, but no reasonable step which may increase hope or optimism should be discouraged.

ASPECTS OF THYROID DISEASE

The *Proceedings of the Second International Conference on Goitre*,[1] edited on behalf of the Swiss Goitre Commission by Dr. Otto Stiner, have recently appeared in a volume of 750 pages. It is a notable addition to the literature of diseases of the thyroid gland ; and the Swiss Goitre Commission is to be congratulated on this second evidence of its success in collecting from all parts of the world the experience of those who have devoted themselves to the study of this most complex subject. For this service the profession is under deep obligation to the members of the Commission, in particular to its president (Dr. H. Carrière) and secretary (Dr. Otto Stiner). Those interested in "thyroid-ology" will be grateful to Professors de Quervain and Wegelin for their excellent résumé (pages xlii–li) of the work of the conference.

The subjects dealt with were: (1) the hyperthyreoses, (2) recent researches in the aetiology of endemic goitre, and (3) malignant goitre. It is not possible here to do more than refer briefly to each of these.

The Hyperthyreoses

The principal rapporteurs on this subject were Professor R. de Josselin de Jong (Utrecht) and Professor J. Holst (Oslo). The former dealt with the pathological anatomy of the thyroid in Graves's disease ; the latter with the pathological anatomy of organs other than the thyroid in Graves's disease. These dissertations, both in keeping with the high reputation of their distinguished authors, were followed by others from such authorities as Eppinger (Cologne), Bérard and Peycelon (Lyons), Roussy (Paris), Dautrebande (Liége), Marañón (Madrid), Fahr (Hamburg), Klose (Dantzig), Oswald (Zurich), and Cattell (Boston), to mention only those who contributed papers. British contributors were conspicuous by their absence. From a perusal of the 353 pages devoted to this subject the melancholy facts emerge that the united wisdom of the world has provided no satisfactory explanation of the cause or causes of Graves's disease, nor any treatment of it more satisfactory—satisfactory because of the rapidity of its results—than subtotal removal of the thyroid gland. Here, indeed, is Medicine discomfited.

According to Eppinger the essential in all the hyperthyreoses is the continued discharge of thyroxine from the gland and its augmentation in the blood. The symptoms can be considered as manifestations of sympathetic and parasympathetic excitation. But the central nervous system itself plays an important part in the pathogenesis of the hyperthyreoses, by reason of the intimate relations which exist between the cerebral cortex, the vegetative nerves, the thyroid and other endocrine glands: relations which render probable a psychogenic form of the malady. But there exist also forms that are due to other endocrine glands or are provoked by the direct action of certain factors (iodine, infections, enterotoxins) on the thyroid. None of these forms of the disease can arise without an exaggerated sensitiveness of the vegetative nervous system to the action of the thyroid secretion (Oswald, Klose, Marañón). At this point the questions might well be asked: What causes this exaggerated sensitiveness of the vegetative nervous system? Is it such as to render the individual hypersensitive to amounts of the secretion which in the person of normal sensibility are without effect? or must we continue to assume—for it is an assumption—that there is an excessive output of thyroxine from the gland? Proliferation of the thyroid epithelium, as de Josselin de Jong rightly reminds us, is in itself no proof of hyperfunction, but only of increased growth. Free thyroxine has up to the present time never been demonstrated in the blood. It is certain that it is not the quantity of iodine contained in the blood that conditions the degree of hyperthyreosis ; for there is no parallelism between the iodine content of the blood and the severity of the symptoms (Sturm, Holst, Höjer). It is true that subtotal thyroidectomy causes the disappearance of symptoms ; but is this in itself proof that an excessive secretion is the cause of them? May it not be that the time has come to look more closely into the causes of the "exaggerated sensitiveness of the vegetative nervous system" to the action of thyroid secretion, and to forget for the moment, or until we have definite proof of its existence, "the augmentation of thyroxine in the blood"?

And are there forms of hyperthyreoses due to disturbances of other endocrine glands? Professor Holst, in his comprehensive survey of the subject, has failed to find any changes in these glands of sufficient constancy to justify our fitting the cap to other endocrine heads. Pituitary hypertrophy, though sometimes present, is not sufficiently regular in its occurrence to justify the incrimination of the thyrotropic hormone of its anterior lobe, even when the thyroid is previously sensitized by bacterial toxins or by pre-existing goitre—a combination

[1] Berne: Hans Huber. 1935. (Pp. 698. 25 fr. ; RM. 20.)

of factors which give rise in animals to a condition simulating Graves's disease (Anderson and Collip, Montreal).

There is much from the clinical and other points of view that might be referred to: the fact that primary Graves's disease occupies a place by itself among the hyperthyreoses; that it is only in this form that pre-operative treatment by iodine has any marked histological effect; that even then iodine produces only a "provisional rest of the parenchyma, but not retreat to the condition of inactivity" of non-toxic colloid goitre (de Josselin de Jong); that iodine, even in small doses, not infrequently causes "iodine-Basedow" in the subjects of non-toxic goitre (de Quervain, de Josselin de Jong); that although increase of basal metabolism is an important symptom of hyperthyreosis it is not always a standard for the degree of toxicosis; it may be found in cases without hyperthyreosis, whereas now and then it is lacking in hyperthyreosis (de Josselin de Jong). But these and other matters—many of them still matters of opinion—must be left for the consideration of those whose interest impels them to study the *Proceedings* for themselves. In concluding this necessarily brief and incomplete reference to the work of the conference in connexion with the hyperthyreoses, the closing paragraph of the résumé by de Quervain and Wegelin may be quoted: "We are still far from a uniform treatment of Graves's disease; this treatment depends not only on the peculiarities of the case, but also on the theoretical point of view and on the practical experience of him who treats it. One can state, nevertheless, that the operative treatment passes more and more into the first place, since it is a question of obtaining a rapid result." In these last words is there a tinge of regret that in this rapid age the uncrippled cure that medicine can undoubtedly effect in a high proportion of cases is too slow for those who have to earn their living, to perform duties that brook not the delays of medical treatment, or have in their homes no means to follow it with any sure hope of success?

Recent Researches on Endemic Goitre

The principal rapporteurs on this subject were Sir Robert McCarrison (Coonoor, India) and Professor G. Pighini (Reggio Emilia, Italy). Both reports showed the notable progress made since the date of the last conference (1927) in knowledge of factors capable of causing goitre under experimental conditions in animals. McCarrison's new researches, conducted on a large scale with carefully standardized material, brought into prominence the importance of the normal mode of growth of the thyroid gland in relation to thyroid swellings in childhood. A statistical study of his material by Madhava (Mysore) revealed the relatively rapid growth of the gland during early life and the progressive decline in its growth after a period corresponding to puberty in human beings. From this study it became apparent that the high incidence of goitre recorded in *some* "goitre surveys" in school children was largely unreal; many of the so-called goitres not "being a diseased state of the gland at all, but the normal expression of the organ's place in relation to the growth and development of the children concerned." This part of his report is commended for study to those who may be called upon to make goitre surveys in school children. A further important outcome of his investigations was the demonstration of the marked effect of diet, faulty in various regards, on the thyroid gland. "The more perfect the diet the more normal is the frequency distribution of thyroid sizes (that is, weight of the gland relative to the body weight), the more stable is the gland in point of size, and the less likely is goitre to occur." Dietetic factors influencing the gland in the direction of goitre production were of three orders: deficiencies (vitamins A and C, proteins, phosphates—relative to calcium—and iodine); excesses (fats, calcium and iodine); goitrogenic factors in certain foodstuffs such as cabbage. There were also anti-goitrogenic substances in foodstuffs, as in milk, carrots, greens, and sprouted pulses, these, like the goitrogenic ones, being unrelated to the iodine contents of the foodstuffs. There was in relation to the thyroid a fat-iodine balance, a calcium-iodine balance, and a calcium-phosphate balance. Excess of calcium, for instance, could, in the presence of a low iodine intake, cause goitre; so also a high iodine intake in the presence of low calcium. Vitamin A deficiency was the chief factor in the causation of lymphadenoid goitre in rats; this type of goitre was not preventable by iodine, though those caused by other factors were. There was no proof that iodine deficiency *per se* was *the* cause of goitre, but a low iodine intake might favour its occurrence in the presence of positive goitrogenic factors. Insanitary condition was again shown to be a potent goitrogenic agent. A substance of unknown nature, extracted from faecal and food deposits collecting in insanitary cages wherein rats were confined, caused profuse growth of the embryo chick's thyroid *in vitro* when present in the culture medium in high dilution; its presence in higher concentration inhibited thyroid growth *in vitro*. Faulty food, insanitary condition, polluted water supplies, and a low iodine intake provided a combination of conditions most likely to cause endemic goitre in human beings; but, as indicated in his report to the conference in 1927, different causes or combinations of causes might be concerned in different places.

Pighini's researches also showed that there were "a great number of substances and conditions through which the structure of the thyroid may be modified and directed towards the formation either of hyperplastic parenchymatous or colloid struma." All these substances—"calcium, borate, fluorine, selenium, organic acids, amines, cyanides, cabbage fare, and fennel"—exercised a stimulating action on the thyroid which might lead to goitre. Their action was counteracted by iodine. Iodine had little or no effect in preventing lymphadenoid goitre. He recognized the possibility that radio-activity of the soil and water, if demonstrated in zones where goitre prevailed—which, however, remained to be done—might also act as a thyroid stimulant and lead to goitre. Several speakers during the subsequent discussion, notably Lang (Munich) and Marchesa (Imperia, Italy), also emphasized this possibility. Pighini's final conclusion was similar to that of McCarrison—namely, that "a role is played in the aetiology of human goitre by agents differing from place to place, and that their relation to iodine in the environment may also have an influence in the determination of the one, instead of another, form of goitre."

Topography of Endemic Goitre

A number of speakers emphasized the place character of endemic goitre, particularly Höjer (Malmö, Sweden), Dieterle and Eugster (Zurich), and Cerletti (Genoa), holding that a goitre-noxa peculiar to the place was responsible for it. Webster (Baltimore) spoke in particular of his researches on "cabbage goitre," with the discovery of which his name and that of Chesney are associated. He referred to McCarrison's confirmation of his observations and to the seasonal variation of goitrogenic potency of cabbage noted by this observer in India and by himself in the United States. He attributed this potency to cyanide, a chief interest of which was that in factors causing depression of oxidation processes in the body the "ultimate cause" of goitre might be found. Spence (London) dealt with the experimental production

of goitre by means of McCarrison's vitamin-poor diet for rats. He observed goitre in 30 per cent. of his rats so fed, though they were ingesting iodine in relatively large amounts. He did not, however, encounter lymphadenoid goitre in his animals. He drew attention to the differences that might occur in the results of experiments carried out in different places, consequent, as his own experience had shown, on differences in quality of, or of slight changes in, the foodstuffs used. Eggenberger (Hérisau), whose experiences in connexion with iodine prophylaxis in endemic goitre is so wide, Muggia (Bergamo), and Reith (Zurich) held more or less firmly to the iodine-deficiency theory of goitre ; while Lunde (Stavanger) spoke of endemic zones of goitre in the interior of Norway where iodine-want could not be incriminated as a cause of the malady, an observation which recalls recent experiences in New Zealand. In general, the opinion seemed to be that important as iodine is in the prevention of the disease its deficiency is not the ultimate cause of it. Further, that although there were many causes of goitre in laboratory animals there was still something lacking for the complete elucidation of endemic goitre in man.

Malignant Goitre

The principal rapporteurs on this subject were Sir Thomas Dunhill (London) and Professor de Quervain (Berne). The former believed that the malignant process was very slow, but that it was continuous. The malignant cells appeared very early, well before the histological picture—penetration of the cells into the capsule and vessels—had demonstrated their malignant character. The distinction between malignant and non-malignant cells was very difficult. He considered that the same functional excitation which led to the hyperplasia and to benign neoplasms can also launch a malignant development, especially when the functional efficiency of the original tissue is impaired or incomplete—a prescient comment, and one that has probably an application to malignant disease in general. In this connexion the profound effect of faulty food on the thyroid gland referred to in an earlier part of this review may be recalled.

De Quervain presented a report of fifty cases of " proliferating goitre " (Langhans) ; a form which morphologically and clinically occupies a place between benign adenoma and cancer, presenting all forms of passage between the two sorts of tumours. Histologically this goitre is " a sort of caricature of the trabecular adenoma ; it has its point of departure in a parenchymatous nodule, of which the transformation into proliferating goitre can occur at all ages of life." Huguenin (Berne) drew attention to the frequency of malignant goitre in dogs aged over 8 years, which corresponds to the age of 40 years in man. In Berne the frequency of these tumours in dogs is greater than in man. Tinker (Ithaca, N.Y.) insisted on the necessity for early removal of adenomatous nodules, which are the most frequent seat of malignant goitre. Coulaud (Paris) reported good results in treatment from the use of a cytotoxic serum obtained from sheep or horses following their injection with an extract of thyroid adenoma from man. Wegelin (Berne) insisted on the difficulty of distinguishing between malignant and benign tumours of the thyroid ; even the study of the metabolism of the tissues, following the method of Warburg, did not always allow of the determination with certitude of the moment at which the tumour took on the characters of malignancy.

The sessions of the conference were presided over by Professor Aschoff (Germany), Professor Wagner v. Jauregg (Austria), Dr. Sloan (United States), Professor Roussy (France), Sir Thomas Dunhill (Great Britain), Sir Robert McCarrison (India), and Professor Pighini (Italy).

VOLUNTARY AND MUNICIPAL HOSPITAL CO-OPERATION

MANCHESTER'S REVISED PLAN

In September, 1935, a Joint Hospitals Advisory Board, the first of its kind in Britain, was set up in Manchester to co-ordinate the work of the municipal and voluntary hospitals. The first report of this Board has been submitted by the Public Health Committee to the City Council this week. Four chief recommendations are made for improving the hospital services of the city, the first two providing for regular consultations between the medical and surgical staffs of neighbouring hospitals and for the appointment of consulting specialists to secure effective oversight of patients admitted to the hospitals. It was originally intended that geographical correlation should be aimed at ; this proposal had to be rejected, however, because the natural course of a medical career in Manchester draws the best and most experienced men to the Royal Infirmary, the teaching hospital. The difficulty which arises by virtue of the Infirmary being near to one of the municipal hospitals while the other two municipal hospitals are associated with the smaller and in some cases more specialized voluntary hospitals may be solved by two further recommendations.

These suggest in the first place establishment of an advisory panel of experts to which would be referred the applications received for any consultant vacancy. This panel will comprise the chairmen of the Public Health Committee, the Joint Board, and the Surgical Staff Subcommittee, with the medical officer of health and Professor J. S. B. Stopford, Vice-Chancellor of the university. Professor A. Ramsbottom and Dr. T. H. Oliver will advise the panel in regard to medical consultant appointments ; Professor E. D. Telford and his successor in the chair, Mr. John Morley, with regard to surgery ; and Professors W. Fletcher Shaw and D. Dougal will be concerned with consultant appointments in gynaecology and obstetrics. When more specialized appointments are to be made an additional consultant will be selected and asked to advise the panel.

Hospital Directors

The second recommendation suggests the appointment of a number of senior consultants who will act in an honorary capacity as directors, responsible for the better co-ordination of the hospital services as a whole and for the initiation and guidance of the new departments which are expected to develop in the near future. It was Professor Telford who pointed out in the course of the general consideration of the Public Health Committee's proposals that in reorganizing its service in order to ensure a proper development of the municipal hospitals it was essential that men who had had experience of the wider problems of hospital policy, teaching, and research should be appointed as directors in the main branches of medicine.

The idea of directorships is not a new one, for it has long been customary on the Continent and in America, though it is only recently being widely adopted in this country. It is proposed that these directors, by regular visits to the hospitals and by frequent consultations with the visiting staff and the medical officer of health, should co-ordinate the services of the three general municipal hospitals to the best advantage as a whole. Statistical and other research will become an important function of the hospitals, and the directors should be in a position to suggest, encourage, and supervise such research. They would also stimulate the development of that intimate relationship which is so necessary for the fullest co-operation between the municipal and voluntary hospitals and the university. Professor Telford expressed the opinion that these posts would be best filled by senior consultants acting in an honorary capacity. The Joint Board has therefore made its four chief recommendations, and has recommended the adoption of Professor Telford's proposals for an experimental period of two years.

It is realized that the actual system of co-operation between voluntary and municipal hospitals has still to be

designed, and in practice it may be found that modifications to the suggested schemes are necessary, but the principle of co-operation has been accepted on all sides, and there seems no doubt that further difficulties can be and will be dealt with as they arise, now the first important step has been taken.

THE MIDWIVES BILL

PROVISION FOR A SALARIED SERVICE

Just over a year ago the Joint Council of Midwifery issued a report recommending the establishment of a salaried service of midwives.[1] The thesis upon which it based its proposals was that reorganization of the midwife service was urgently needed in view of the extent and growing importance of the midwife's work, and that the only way whereby this could be done was to place her employment on a salaried basis, partly by the creation of a municipal service under the control of local authorities and partly by supporting and extending the existing salaried services for voluntary nursing associations. The council proposed further that midwives in the service should be available to act when required as maternity nurses for patients who engaged a medical practitioner for the confinement, but could not afford to pay for a trained nursing attendant as well. An essential feature of the scheme was that public money should be provided to compensate midwives who were not accepted for enrolment in the municipal service and who found that they could not retain their work under the changed conditions.

Summary of the Bill

The text was published last week of a Midwives Bill which has been presented to the House of Commons by Sir Kingsley Wood, Minister of Health. The main purpose of this measure is to improve the standard of domiciliary midwifery in England and Wales by establishing an adequate service of salaried midwives under the control of local authorities. The Bill is also designed to raise generally the status of the midwives' profession by providing adequate salaries and secure prospects for those who enter the new service.

The terms of the Bill may be summarized as follows: It provides for the establishment by the local supervising authorities of a salaried midwives' service ; the payment by these authorities of compensation to midwives who voluntarily retire from practice and to those who are required to retire owing to old age or infirmity ; the payment by the Exchequer of grants towards the cost of the new service and towards the amounts expended in compensation ; the prohibition of maternity nursing by unqualified persons ; and the provision of "refresher" courses of instruction for all midwives in practice.

The New Service

Under Clause 1 each local supervising authority is required to secure the whole-time employment of a sufficient number of midwives for attendance, not only as midwives, but also as maternity nurses during, and for a period of at least ten days after, childbirth on women in their own homes.

Under Clause 3 fees will be charged for the services of the midwives, but the local authorities are empowered to grant remission or rebates in proper cases. When the new service is established every expectant mother, whatever her financial position, will be able to obtain the services of a qualified midwife for her confinement, and if she engages a doctor a midwife will be available for the maternity nursing.

Co-operation and Co-ordination

Provision is made for full co-operation with voluntary organizations and co-ordination of the new service with the existing health services of local authorities is ensured. The local supervising authorities under the Bill must consult at the earliest stage with all other local authorities who may be concerned, with voluntary organizations who are already employing salaried midwives, and with local bodies representing the practising midwives and the general practitioners.

The local supervising authorities may either themselves employ midwives or secure their employment by other local authorities or by voluntary organizations. It is regarded as important that the successful work at present carried out by voluntary organizations should continue.

Duties of the Minister

The detailed proposals of local supervising authorities are to be submitted to the Minister. The interests of other local authorities and of voluntary organizations, who already employ salaried midwives, are safeguarded by their right to make representations to the Minister and by the power of the Minister to give directions requiring the local supervising authority to vary their proposals so as to make arrangements with particular authorities or voluntary organizations.

Local authorities must submit their proposals to the Minister within six months, and bring the service into operation within twelve months, from the commencement of the Act. Some local authorities, however, will, owing to special circumstances, require more time, and the Minister may extend the periods.

Appointment of Midwives

In order that midwives at present practising may have every opportunity of applying for posts in the new service, every authority is required by Clause 2, before first making appointments under the Act, to advertise its intention in the Press and to send a separate notification to each midwife practising in its area.

Every authority which has a superannuation scheme is empowered, when assessing the amount of pension payable to a midwife first appointed under the new scheme within three years from the commencement of the new Act, to take into account any period or periods not exceeding ten years during which she practised as a midwife before employment by the authority.

Exchequer Assistance

Provision is made under Clause 4 for the payment of Exchequer assistance equivalent in the aggregate to 50 per cent. of the additional expenditure imposed on local authorities. This expenditure will fall under two heads: (1) compensation, and (2) employment of midwives.

The expenditure of each authority will be estimated (in the case of midwives employed by local authorities) on the basis of the estimated average net annual cost per midwife for all local authorities. This estimated expenditure will be halved and the resultant sum will be increased or decreased in the proportion which the weighting factor for that authority (the ratio between the estimated actual population and the weighted population calculated for the block-grant purposes) bears to the average weighting factor for the whole country. The measure of need taken will thus be the same as that applied in the distribution of the block grant under the Local Government Act, 1929. The Minister will have power to reduce those grants in the case of any authorities which fail to provide or maintain an efficient service.

Compensation

Clause 5 provides that all practising midwives who surrender their certificates to the appropriate local authority within a period of three years from the commencement of the new Act shall be entitled to the payment of compensation from the authority. The authority may within the same period require any midwife who is incapable, by reason of age or infirmity, of efficiently performing her duties to surrender her certificate, which will be returned to her after cancellation. In such cases compensation must be paid by the authority.

The compensation paid will be equivalent in the case of voluntary retirement to three times, and in the case of compulsory retirement to five times, the average net annual emoluments of the midwife for the preceding three years. The local authorities will be empowered in suitable cases, instead of making the lump sum payment, to purchase for the midwife an annuity terminable at the age of 70, or earlier in the event of death. A midwife may appeal (*a*) to the county court if she is refused compensation or is dissatisfied

[1] *British Medical Journal*, February 23rd, 1935, p. 371.

with the amount of compensation awarded, and (*b*) to the Minister against the local authority's requirement to retire.

Prohibition of Practice by Unqualified Persons

Clause 6 empowers the Minister, when he is satisfied that an authority has established an adequate service of salaried midwives, to make an Order applying to that authority's area (or in the case of a county council to any district in the county), the effect of which will be to make it an offence for any person who is neither a midwife nor a registered nurse to receive any remuneration for attending as a nurse on a woman in childbirth or at any time during the ten days immediately after childbirth.

Exceptions are made for (1) persons undergoing training with a view to becoming doctors or midwives, and (2) women who before January 1st, 1937, have been certified by the authorities of an institution approved by the Minister to have been trained in obstetric nursing.

Miscellaneous Provisions

The Central Midwives Board is empowered by Clause 7 to frame rules requiring midwives in practice to attend post-certificate courses, and local authorities are required to provide or arrange for the necessary courses. The rules will be subject to approval by the Minister.

The opportunity has been taken to include certain amendments of the Midwives Acts. For example, Clause 9 provides that the scale of fees payable to medical practitioners shall be fixed by regulations, and the Minister's powers in this respect shall include power to prescribe conditions subject to which the fees are to be payable.

The Bill does not extend to Scotland or to Northern Ireland.

THE B.M.A. AND MATERNITY SERVICES

The following communication, setting forth the opinion of the British Medical Association on the way maternity services should be conducted, has been sent to the Press.

The British Medical Association is concerned as to some of the effects of recent public discussions with regard to maternal mortality in Great Britain, and of many statements made on the platform and reported in the Press which appear to be of an exaggerated character. The Association has declared:

"Maternal mortality is a scientific and administrative problem which deserves careful and scientific study, but, in the experience of practising doctors, the publicity which it is receiving to-day is tending to terrify child-bearing women and is in itself a cause of increased mortality."

Nevertheless the Association will not be satisfied until the mortality rate is considerably reduced. The Association has for many years given careful attention to the clinical and administrative problems associated with maternity. These investigations have been made by committees which included not merely a number of experienced general medical practitioners, but representative obstetric specialists, teachers in medical schools, and medical officers in the Public Health Service. Their conclusions have been in every case unanimous or almost unanimous, and a public pronouncement of these conclusions, of a general character, seems now desirable.

Two Important Considerations

In the forefront it must be emphasized that maternity is a natural physiological event, though it is one involving complex, delicate, and important processes. Departures from the normal occur in a small proportion of cases. The vast majority of cases are conducted with complete success in every respect, and, as demonstrated by comparable statistics, there is only one country in the world (Holland) in which safety appears to be *slightly* greater than in this country. In nearly every other country maternal mortality is considerably higher than it is here.

A second important consideration is that maternity and its conduct are not concerned merely with attendance during the actual process of delivery, but comprise supervision from first to last—from the time that changes consequent upon conception manifest themselves until the return to normal some short time after childbirth. It is obvious that this whole period and event cannot be isolated from the rest of the health history and experience of the mother, whether before, during, or after the period of actual pregnancy and parturition; and that therefore it is intimately connected with—indeed, an integral part of—such medical help, advice, and treatment as the mother is accustomed to receive apart from maternity. In this respect it is important to note that all available evidence demonstrates that normal confinements, and those which show only minor departures from the normal, can be more safely conducted at home than in hospital. The supervision of maternity as a whole must obviously be conducted almost always under domiciliary conditions.

Ante-natal Clinics and Hospital Beds

Further, the action during recent years of a number of authorities of establishing a type of ante-natal clinic in charge of whole-time medical officers, of providing an increasing number of hospital beds for maternity cases without careful selection of the cases necessitating admission thereto on medical grounds, and of successfully encouraging or inducing acceptance of these provisions by women, so cutting off the medical practitioners of those areas from a considerable part of their experience in the conduct of maternity, has not, in fact, resulted in an improvement in maternal mortality, but has been accompanied by an appreciable increase thereof. The Association realizes the complexities of the problem, and does not draw crude conclusions from facts of this kind; but it is obliged to recognize and point out that where a large number of maternity cases are aggregated in hospitals there is commonly an increased risk of puerperal infection, and that, very disappointingly, ante-natal clinics, on their present lines, have not been, and seem unlikely to be, successful. All these considerations are of the first importance when local authorities are considering communal action on this matter lest such action should be taken, or pursued, on lines which may prove to be in the wrong direction.

Medical Needs of Mothers

The medical requirements of a woman during the period of maternity are:

1. Medical supervision *throughout* by the doctor of her choice, with specialist and hospital aids where needed.
2. Efficient nursing and advice by a skilled midwife or maternity nurse of her choice.
3. Provision of help in the house during the period of her actual incapacity.
4. Supply of dressings, special apparatus, or means of transport when required.

There are, of course, large numbers of women who can provide one or more or all of these requirements for themselves, but the Association is strongly of opinion that the State should see to it that, by some means or other, whether by an extension of the scheme of national health insurance or by the action of local health authorities, they should all be available for every mother.

There would still remain urgent need for further action in the direction of propaganda to persuade women to take advantage of the means provided for them, research into the obscure causes of puerperal sepsis and other forms of maternal morbidity, and the improvement of knowledge, skill, and care among those who have any part to play in the responsibility for the conduct of maternity.

Fully appreciative as it is of the great need for improving the position of midwives, both as to training, status, and finance, the Association believes that legislation to these ends is but a small part of that which is required to remedy the imperfections of the present system, and that it is essential to take steps in rapid succession to establish a complete maternity scheme on the lines indicated in this memorandum, envisaging from the outset the needs of mothers as a whole and the methods of providing for them.

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MEDICAL RESEARCH COUNCIL

ANNUAL REPORT FOR 1934–5

A leading article and an editorial on this report[1] appeared in the *Journal* of March 14th on pages 536 and 544. The following is an account of some of the work carried out under the auspices of the Council.

Biological Standards

The National Institute for Medical Research regularly distributes specimens of the standard preparations held by the Institute under the Therapeutic Substances Act, or on behalf of the Health Organization of the League of Nations, or for the purposes of the *British Pharmacopoeia*. The Standards Laboratory, in the School of Pathology at Oxford, continues its work of producing and standardizing bacterial suspensions and agglutinating sera for diagnosis of bacterial infections. The output from the laboratory has increased by 16 per cent. in the last twelve months, and some 400 laboratories at home and abroad have made use of its products.

The first international standard for insulin was prepared in the dry stable condition by the late Dr. H. W. Dudley, and adopted in 1925. Its introduction led to world-wide uniformity in the value of the unit of insulin. As the first standard was nearing exhaustion a new one had to be produced that was at the same time more strictly comparable to the pure modern insulins. Dr. D. A. Scott of the Connaught Laboratories, Toronto, in preparing this discovered that the crystalline insulin consists of a zinc salt of the true hormone. The value assigned to the new standard is twenty-two units per milligram.

Prevention of Puerperal Fever

In 1930 the Council gave its support to the establishment of a "unit" of research on puerperal sepsis at Queen Charlotte's Hospital. A recent report by Dr. Dora Colebrook (see *B.M.J.*, January 4th, 1936, p. 18) describes the work done in the unit. Whereas it has been known for some time that a haemolytic streptococcus was responsible for most cases of puerperal fever, it has only recently been known that the cocci having the property of haemolysing red cells comprise several groups and a number of subgroups, of which only certain members are harmful to human beings. The new technical procedures developed at the Rockefeller Institute, New York, for the differentiation of the haemolytic streptococci have made it possible for the workers at Queen Charlotte's to reach this conclusion: that haemolytic streptococci occasionally found in the genital tract of healthy parturient women are not identical with those causing puerperal fever and are usually harmless to their human hosts. From this it would appear to follow that the pathogenic types of haemolytic streptococci which do invade the genital tract come from an outside source.

"In the nature of the case, it would be scarcely possible to obtain stronger evidence than is given by Dr. Colebrook's report, and by other work from Queen Charlotte's Hospital and elsewhere, as to the responsibility of the throat and nose-carried streptococci on the one hand, and of those of various septic infections on the other, in the causation of puerperal fever. Until methods are known for ensuring a high resistance of the maternal body to these pathogenic agents it should be recognized that it is undesirable—and indeed dangerous—for any person suffering from an acute infection of the respiratory tract to engage in maternity work. It is also unwise for nursing homes and small hospitals to deal with maternity and surgical cases under the same roof unless adequate provision can be made for complete separation of the nursing staffs of the two departments."

Clinical Research

At University College Hospital Sir Thomas Lewis and Dr. Pickering have continued their work on the various maladies in which the blood supply to digits ceases intermittently or permanently. They have concluded that many distinct conditions have been described under the common name of Raynaud's disease, and that this term should be abandoned. Gangrene, it is suggested, is never the result of uncomplicated spasm of arteries, but depends always on the structural occlusion of vessels.

Work in the same department by Dr. Grant and his colleagues showed that the return of vascular tone which follows denervation is due to an increased responsiveness of the denervated vessels to various stimuli, including an adrenaline-like substance circulating in the blood stream. This substance apparently comes neither from the adrenals nor from the pituitary body. Nervous or muscular activity increases its concentration in the blood. Evidence suggests that the substance may help to maintain normal vascular tone and body temperature, and that an increase in its concentration may cause the pallor of ill-health and the rise of body temperature in fever.

Dr. Pickering and Dr. E. J. Wayne have investigated the relation to the condition of the blood of the pain of angina pectoris and of that of intermittent claudication when these appear in patients suffering from severe anaemia. They have shown that in anaemic patients without recognizable peripheral vascular disease suitable exercise of the limbs causes severe muscular pain identical with that of intermittent claudication: with cure of the anaemia, similar exercise is accompanied by very slight or no pain. The same relations of pain to exercise have been found in anaemic persons suffering from anginal attacks. The conclusion is reached that the main factor responsible for the development of anginal pain in anaemia is deficient oxygen supply to the myocardium. These observations emphasize the close similarity between angina and intermittent claudication. Earlier work at University College Hospital had suggested that the pain in these two conditions is due to an accumulation in the tissue space of a chemical substance or substances liberated from heart or skeletal muscle during work. The present work suggests that such substances are normally removed by oxidation.

Dr. J. F. Wilkinson and his co-workers at the Manchester Royal Infirmary, in a study of 700 cases of pernicious anaemia treated during the past six years, conclude that normal health can be regained and maintained, and that involvement of the spinal cord does not occur, if adequate and thorough treatment with hog's stomach or parenteral liver extracts is carried out. These workers have shown that haemopoietin (the anti-anaemic principle in hog's stomach) is present in the normal human stomach, but that in the "pernicious-anaemia" stomach there is not sufficient to be detected by current methods. The anti-anaemic liver principle has been found in normal quantity in treated cases of pernicious anaemia, and in aplastic and other anaemias: it is absent only in the livers of untreated cases of pernicious anaemia in relapse.

Anaesthetics

For the past twelve years, in conjunction with the Anaesthetics Section of the Royal Society of Medicine, the Anaesthetics Committee of the Council has promoted research into different methods of producing anaesthesia.

[1] Report of the Medical Research Council for the Year 1934–1935. London: H.M. Stationery Office. 1936. Cmd. 5079. (3s. net.)

Investigations have been made into the purity of nitrous oxide and of ether, and of new preparations. Avertin and evipan came into general use in this country after preliminary trials organized by the committee. Recently the committee have examined the new anaesthetics, vinethene (a special preparation of divinyl ether), and cyclopropane. In the Obstetric Unit at University College Hospital Dr. Freda C. Kelly has found that sodium soneryl and syrup of chloral, given together for the first stage of labour, gave relief from pain without ill effect on mother or child.

Nutrition

In the introduction to the report it is stated:

"It is most fortunate that, in spite of the large number of new facts discovered in recent years bearing on nutrition, the essential teachings which will help the community so greatly can be reduced to a few simple statements. The first is that the younger the child the more essential is correct feeding for proper growth and health. It is thus necessary to apply the new teachings of nutrition to the case of the pregnant and lactating mother, so that the sustenance she supplies to the developing offspring shall be the best possible; and, despite the great importance of improvement in the dietary of school children, proper feeding of the infant and child of pre-school age is an even greater need. Breast feeding is of even higher value than has been previously believed, and ought to be more extensively adopted and continued for longer periods."

Working under the direction of the Committee on Iodine Deficiency and Thyroid Disease, Miss M. G. Crabtree, using Mr. C. O. Harvey's method for determining minute quantities of iodine in biological substances, has studied the iodine content of samples of milk, pasture, and drinking-water from parts of England where simple goitre is common among school children and where it is rare. So far her findings show that the iodine content of milk from the non-goitrous districts of Suffolk is higher than that from the goitrous districts of Somerset.

Dr. S. S. Zilva and co-workers have continued researches into the action of vitamin C. Some compounds related to ascorbic acid show varying antiscorbutic activity. When these compounds are introduced into the blood only those which are active are taken up by the tissues, there being some relation between the degree of fixation by the tissues and the antiscorbutic power. When pure vitamin C (*l*-ascorbic acid) is injected into guinea-pigs depleted of that vitamin it is taken up in high concentration by the intestinal canal, especially the small intestine. It has been shown previously that the skin of the apple is richer in vitamin C than the rest of the fruit: the vitamin C content is high where the skin has a marked flush (whether the apple is green or red). Experiments are being made into the desirability of adding synthetic *l*-ascorbic acid to various foods in the process of canning. Drs. Harris and S. N. Ray have continued their work on the diagnosis of vitamin C deficiency by chemical tests of urine. Infants suffering from scurvy or who have not received sufficient fruit in their diet, excrete less vitamin C than do healthy babies. Observations by Dr. L. G. Parsons and Dr. E. Pritchard suggest that a suboptimal intake of vitamin C is common in artificially fed infants. Breast milk is three to four times richer in vitamin C than cow's milk.

Professor J. C. Drummond and others at University College have made further studies of the chemistry of vitamin E. "It seems probable that the active substance is a polycyclic alcohol containing a ring system not dissimilar from that of the sterols and bile acids." Extensive researches are being conducted into the B vitamins. It seems likely that pellagra is not due to deficiency of any recognized component of the vitamin B_2 complex. Encouraging results have been obtained in a few cases of pink disease in children treated by vitamin B concentrates.

Scotland

Health Exhibition in Edinburgh

The Earl of Rosebery, in opening a health exhibition at Edinburgh on March 18th, said there were four principal things which went towards the preservation of health: exercise, cleanliness, fresh air, and nourishing food. In his opinion not enough attention was paid to the question of the pollution of air at the present time, although he believed that much could be done towards reducing smoke and making the air of a city as fresh and pure as it was on the hills. Lord Provost Gumley, who presided at the opening ceremony, acknowledged the work which had been done by the public health department and by Dr. Guy, medical officer of health, to promote this exhibition. Much interest was taken in a group of children playing in the maternity and child welfare department's nursery, arrangements having been made for relays of children to come to the exhibition for this and other sections at regular intervals from day to day. Another group of children were lying on mattresses under treatment by artificial sunlight. A cinema theatre showed films illustrating work of the streets and lighting department, the sanitary department, and others.

Preservation of the Teeth

In a lecture to the West of Scotland Branch of the British Dental Association on March 10th, Dr. Chalmers Watson said that some useful information relevant to the question of nutrition might be gleaned from the dental side. The Chief Medical Officer of the Board of Education for England, in his annual report for 1934, said that a disease which was met with in considerably more than 95 per cent. of the children attending elementary schools constituted a formidable problem, and statistics for Scottish areas had revealed an average incidence of dental caries in 80 to 85 per cent. of children. The Education Health Service Reports issued by the Glasgow Corporation had contained a table of the number of children in the periods 1910–14 and 1929–33 with varying degrees of dental decay. This had shown the results of dental work, which indicated that some degree of improvement had taken place between the first period and the second. The number of children with five or more carious teeth had decreased, although the number with between one and four affected teeth had increased. If, however, they were justified in assuming that the state of the teeth furnished a general guide to the physical condition of the child, then the decrease indicated the need for caution in assuming that physical deterioration was largely the result of trade depression associated with economic conditions. The Glasgow figures revealed a relatively trifling difference in the state of the teeth among poor children in notably depressed areas and among those who went to a good school in non-depressed areas. Dr. Chalmers Watson said he had himself examined a series of 250 children between 10 and 12 years of age in two schools of East Lothian. In one situated in a notably depressed area the proportion of teeth free from caries was 28 per cent.; the other, a school in a seaside area free from depression, the percentage was 44. The physical condition of the scholars with bad teeth was definitely inferior as regarded general nutrition to that obtaining in the other school. The cure of caries lay in its prevention, but though the knowledge required for its prevention was at their disposal few made use of it. Faulty feeding, primarily consisting in lack of lime and of fresh natural foodstuffs, was the real factor. The disease began frequently in intrauterine life through faulty feeding during pregnancy.

Elsie Inglis Hospital, Edinburgh

At the annual meeting of the Elsie Inglis Memorial Maternity Hospital, Edinburgh, Lady Ruth Balfour, who presided, opened the first part of a new out-patient department. She said there had been an increase in the number of both in-patients and out-patients treated at this hospital and the Bruntsfield Hospital for Women.

In the maternity hospital the death rate in confinements had been 5.4 per 1,000, which was less than the death rate for the country as a whole. A new ward, presented by an anonymous donor, would be opened in the Bruntsfield Hospital, for ear, nose, and throat disorders. The report of the hospitals shows that during the year the number of patients admitted to Bruntsfield Hospital was 865, and to the Elsie Inglis Hospital 1,253—record figures for both institutions. The attendances of out-patients totalled 37,257. A deficit of £2,747 on working expenses has been lessened by the receipt of £1,400 in legacies and donations.

England and Wales

The Mental After-Care Association

The fifty-sixth annual meeting of the Mental After-Care Association was held at Stationers' Hall, London, on March 18th. Lord Wakefield of Hythe, the president, was to have taken the chair, and, being prevented from doing so, sent the most handsome of "apologies" in the form of a cheque for £500, being double his contribution to the collection at the last annual meeting. Dr. Reginald Worth, the chairman of the council, in submitting the annual report, said that last year 3,307 patients were helped, an increase of 117 over the previous year. The number of convalescents had also largely increased, and most of the twenty homes had been well filled throughout the period. The report made it clear that the question of employment of those who had been in mental hospitals remained one of the chief difficulties. The large amount of detailed work involved in placing or attempting to place such people in situations could only be realized by those with experience of the administration; nevertheless, during the year about 200 situations had been found. The association still boarded out patients under Section 55 of the Lunacy Act, and dealt with large numbers of men and women who still required guardianship but were well enough to live away from hospital under supervision. This boarding out of patients again entailed a considerable amount of detailed work in the choice of homes to ensure getting the right patient into the right home. Altogether eighty-three patients were boarded out during the year, fourteen of whom were discharged recovered and twenty-nine returned to hospital. The hope was expressed that this work would increase, and the results were certainly justifying the experiments. The association was also supplying social workers for out-patient clinics, and collecting case histories for hospitals. The financial report presented by the treasurer, Mr. J. M. Oakey, showed that the association received during the year rather more than £3,000 by way of voluntary gifts, and £13,000 as contributions on account of services rendered. Mr. J. A. L. Duncan, M.P., a former chairman of the Mental Hospitals Committee of the London County Council, spoke of his experience in that capacity of the association's work in assisting patients from all the L.C.C. mental hospitals. Sir Hubert Bond, Dr. G. W. B. James, and others briefly addressed the meeting.

Royal London Ophthalmic Hospital Dinner

The annual dinner of the Royal London Opththalmic (Moorfields Eye) Hospital took place on March 12th at the Langham Hotel, with Sir John Herbert Parsons in the chair. The health of the guests was proposed by Mr. Affleck Greeves and replied to by Mr. Percival Hay. The chairman's health was proposed by Mr. R. Foster Moore. The chairman proposed the toast of "The Hospital and Medical School," which was responded to by Mr. Theodore W. Luling, the chairman of the hospital, and Mr. Charles Goulden, dean of the medical school. In presenting his report on the work of the school during 1935, the Dean said that during the past year 107 students had joined the practice of the hospital; of these seventy-four had become perpetual students, and sixty-four took a complete course of systematic instruction. In all 381 lectures and demonstrations were given, apart from clinical instruction. In Part I of the D.O.M.S. examinations sixty-two candidates presented themselves in all, and of the thirty-nine that were successful, twenty-two were students of the hospital. In Part II of the D.O.M.S. forty-three candidates presented themselves in all, and of these thirty-three passed, twenty-three being Moorfields students. At the D.O. Oxford four of the five successful students had pursued their studies at Moorfields. The Dean pointed out that although in the curriculum the school was providing a course of instruction that met with a great deal of support, nevertheless it was unable to pay its way in that the honorary staff received no remuneration for the many hundreds of lectures that were given, let alone clinical instruction; that it was a common experience that no educational establishment run for teaching only could be self-supporting. Undergraduate medical teaching in London was heavily endowed by the Board of Education, without which it could not exist. Until the setting up of the Post-Graduate College and Hospital no official attempt had been made to encourage or endow post-graduate education. The result had been that the endeavour to keep any post-graduate instruction going in London had fallen upon the good nature of the medical staff of a handful of hospitals, in the forefront of which had been Moorfields, and the teaching of Moorfields was hampered by the need of endowment. Official help was not at present obtainable, and the school could only look forward to endowment by private philanthropy. Through the generosity of the lay management of the hospital, new buildings were now available for the use of the school, which were beautiful, convenient, and quiet. The school had worked bravely for many years and had not published its financial needs.

Central Midwives Board

Among the reappointments to the Central Midwives Board announced at the March meeting of the Board were those of Dr. W. Allen Daley, nominated by the Ministry of Health, and Dr. J. J. Buchan, representing the Society of Medical Officers of Health. It was agreed to reappoint the following examiners for a term of five years: Drs. V. J. F. Lack, C. S. Lane Roberts, H. G. Taylor, H. G. Everard Williams, and Martin Oldershaw (London Centre); Dr. Hilda Lloyd (Birmingham Centre); and Dr. J. W. Burns (Liverpool-Manchester Centre). Approval as lecturer was granted to Dr. K. F. Mackenzie, Sussex Maternity Hospital, Dr. L. B. Patrick, Jessop Hospital, Sheffield, and Dr. Robert Watson, Northampton Queen's Institute of District Nursing. In reply to a letter from the medical officer of health of a local supervising authority, the Board agreed to point out that since the staff midwives at the municipal maternity home did not appear to be acting as maternity nurses as defined by rule E.1(A), in so far as they delivered patients in normal cases, and since there was no resident medical officer at the home, the Board regarded cases of labour attended by staff midwives as midwives' cases, and consequently was of opinion that the staff midwives of the home were subject to the provisions of rule E.12. With reference to the report of the British College of Obstetricians and Gynaecologists on its investigation into the use of analgesics suitable for administration by midwives, the Board decided to appoint a subcommittee to consider changes which would have to be made in the Board's rules to give effect to the recommendations.

The lantern for which Dr. F. W. Edridge-Green has been awarded a prize by the Royal Society of Arts is an improved form of his colour-perception lantern, which is the official test of the British Navy and used by many foreign navies, the chief shipping companies, and in several colonial and foreign railways. It enables tests to be made under conditions very closely allied to those found in everyday practice, while the colours chosen are those which most rapidly and definitely disclose any defect in colour perception.

Reports of Societies

FATIGUE

An informal after-dinner discussion on fatigue was arranged by the Hunterian Society on March 16th.

Dr. ADOLPHE ABRAHAMS, in opening, said that the majority of the patients who consulted their medical advisers for " tiredness " were not suffering from disease, nor, as they were disposed to allege, from overwork ; they were simply bored. The amount of congenial work which a person could perform was colossal. When he himself was a house-surgeon at St. Bartholomew's he worked on one occasion from Friday to Tuesday without retiring to rest, and his sensation was not of fatigue but of supreme happiness. When patients came protesting, however, that their sufferings from fatigue were of comparatively recent onset, and that they were incapable of the degree of exertion they considered appropriate to their physique and age, one thought of some toxin which might act as a brake upon the machinery of activity. If contemporary advertisements were taken as reflecting current theories, the cause of fatigue resided always in the alimentary canal, and could be countered by a suitable pabulum to provide energy or eliminate toxins. The advantages of this, that, or the other patent foodstuff were illustrated by life histories so that he who ran might not even have to read. The latest advertisement was particularly ingenious, suggesting that as during sleep a certain amount of energy was necessary for the vital processes, night starvation might be prevented by a preparation taken on retirement.

Muscular Exercise

The scientifically minded physician must also recognize the point of view of the psychologist who regarded fatigue as a defence mechanism against the undertaking of responsibility, or against some form of anxiety, or even as an evidence of nature preventing over-exertion. On the question of fatigue in relation to muscular exercises, a sprinter at full speed was producing lactic acid at the rate of one gram for every stride taken. Training for athletes consisted in not only the perfection of the circulation to eliminate the lactic acid, but also in educating the tissues to tolerate its excess, or perhaps in the development of antibodies, and he had the impression that the great athlete was constitutionally superior in this respect.

It was to be understood, of course, that in violent exercise it was the nervous system that had the last word. It was fundamentally a question of the willingness of the individual to push himself to the last extremity, and that extremity was beyond measurement. Fatigue in muscular exercise was a highly complicated mechanism which included not only the accumulation of lactic acid, the exhaustion of the fuel supply, the element of monotony, but also such a factor as interference with heat regulation and loss of moisture in certain unfavourable climatic conditions. A lassitude which sometimes followed intense muscular effort had been explained as evidence of myocardial weakness. The explanation was one which he could not accept. Surely the muscular metabolites of violent exercise must affect the central nervous system and the vasomotor system, and it was to this that he attributed the protracted and delayed fatigue which on quite insufficient evidence was regarded as heart strain.

Mental Fatigue

Dr. C. S. MYERS, principal of the National Institute of Industrial Psychology, said that the usual definition of fatigue as that state of lessened activity of a reaction which resulted from its previous activity was too succinct to explain the varied effects of prolonged mental work. Uninterrupted concentration at any task was unnatural. Voluntarily or involuntarily the human mechanism took repeated rests, though it was interesting to observe that while uninterrupted mental activity in one particular direction was impossible, the freer play of fantasy in day dreams and sleep seemed untiring. Mental fatigue might be felt without necessarily showing itself in impoverished work. The measurement of the output of work was the most trustworthy index of mental fatigue, but unfortunately there were no sufficiently reliable tests, and purely physiological tests had proved of very little use.

The obsessional type of psychoneurotic might be kept by his abnormally strong perseveration incessantly and imperiously at work when the normal individual would be unable to resist taking protective rests. There was no evidence, he thought, that extreme muscular fatigue could ever produce mental breakdown, although it might result in mental weariness. If an individual had acquired skill in conquering bad habits or in replacing old associations by new, in fatigue the old habits and associations had a tendency to break through. There followed a certain loss of skill, loss of memory, proneness to accident, as well as typical conflicts and complexes which previously had been repressed from consciousness.

Nothing was known, said Dr. Myers, as to the cause of fatigue. Nothing was known about the actual toxins which might produce it, whether coming from the alimentary canal, or in some cases of neurogenic character, or whether resembling in their actions the toxins generated by excessive muscular activity. It was not known what was the difference between the fatigue caused by prolonged work and that caused by delayed sleep. But it could be said that at present there was only one remedy which could be employed for all kinds of fatigue, and that was rest, coupled if necessary with appropriate psychotherapeutic measures.

Industrial Problems

Dr. J. C. BRIDGE, chief medical inspector, Factory Department, Home Office, said that since 1918 very much more attention had been paid to the health and comfort of the industrial worker, and in particular to the effects of various kinds of work in producing fatigue. He had been surprised at the amount of work in the heavy industries that a man could do for eight or more hours a day, probably because the work was not continuous, and " breathers " were taken. Mechanization had done much to relieve this heavy labour. No doubt at the end of the day a man engaged in such work was fatigued. He presumed there was a fatigue which was physiologically healthy, but which if exceeded became pathological, though there were no means of saying where the one state ended and the other began.

Repetition work in which the worker became little more than a looker-on, performing some automatic act, inevitably produced a different kind of fatigue which might be described as boredom. Another aspect of employment which interested him particularly was the constant lifting of comparatively light weights—20 lb. or so—by workers in certain industries throughout the day. It had been found that boys of 14 to 16 years engaged in brickmaking occupations lifted in this way an aggregate of 40 or 50 tons a day. Physical fatigue in industry had greatly diminished and was still diminishing, but owing to the altered methods of employment a different kind of fatigue, not physical, but hardly capable of being called mental or nervous, was taking its place. Its prevalence and its possible remedy was a matter of great interest to himself and his colleagues at the Home Office.

Dr. GUY CROWDEN, reader in industrial physiology, University of London, said that it was impossible to regard fatigue as a single entity. It could not be isolated from what appeared to be the daily cycle of every individual—namely, activity, fatigue, and recovery. Whether at the end of this daily cycle there was still an accumulation of fatigue over recovery, requiring some fresh adaptation and compensation at the end of a week or other period, was an interesting subject for investigation. From the physiological point of view the first factor which influenced the production of fatigue was the work factor itself, including the nature of the work, whether primarily dynamic, involving effort fatigue, or primarily static, involving tension or postural fatigue. Over and above the work factor, and qualifying it, was the environment factor, including such conditions as ventilation, heating, humidity, also noise, vibration, and air pressure changes.

There was further the time factor, which again qualified the other two—the rate of change in muscular form, the duration of continuous effort without the interposition of rest pauses, the hours per day worked, and the days per week, and so on. Over all these was the personal factor—the degree to which the individual was educated and instructed and able to appreciate the significance of changes in daily routine, and to make use of opportunities for the better management of his work. These four factors contributed to the general problem of equilibrium in the daily cycle. He thought the best definition of fatigue was a diminished capacity, whether of the body as a whole or of the special sense organs, for doing work, considered in relation to what the body or the sense organs could do, by previous tests, in a state of optimum fitness.

Discussion

In further discussion many members gave interesting personal experiences and observations. Dr. HOWARD HUMPHRIS mentioned the dictum of Bergonié of Bordeaux, that it was not muscular exercise which produced fatigue, but brain effort—a conclusion borne out by the Bergonié chair, which induces faradic contractions of the muscles over long periods, but without fatigue. Dr. RICHARDS also argued that fatigue was never, or with the rarest exceptions, a muscular fatigue at all. Mr. H. L. ATTWATER mentioned an observation of some factory workers which had suggested to him that it was not repetitive and automatic tasks which induced fatigue, but principally a combination of mental concentration and muscular work. Dr. P. B. SPURGIN remarked on the correlation of fatigue with faulty nutrition. To combat fatigue nutrition was essential—in his own experience it was more necessary than sleep. Dr. LETITIA FAIRFIELD spoke of the importance of rhythm in work as a means of overcoming or postponing fatigue, a principle which had been applied in education in the Froebel and Montessori methods.

Mr. HOPE CARLETON described the work done recently at the Research Farm at Downe, in Kent, on fatigue in smooth muscle. That work had brought about a great advance and had revealed the falsity of some old shibboleths. For example, it had shown that in fatigue in smooth muscle there was no deficiency of blood chlorides, and again that fatigue was not due to histamine bodies which it had been thought were at the bottom of their troubles as surgeons. The conclusion was that the death-dealing substance lay in the cell. Of its nature they were uncertain, but to get rid of it it was necessary freely to resect. That was a contribution to the subject of fatigue from a different angle, but one, he thought, which it was well to bear in mind.

INTRACRANIAL SURGERY

At a meeting of the Chelsea Clinical Society on March 17th, with the president (Mr. H. PAXTON BAYLIS) in the chair, a lecture, with a lantern demonstration, was given by Mr. HUGH CAIRNS, surgeon, neuro-surgical department, London Hospital, on "Modern Intracranial Surgery."

Mr. Cairns limited his remarks to a discussion of intracranial tumours, the treatment of which, he said, had made great advances in recent years, largely owing to the work of Harvey Cushing and his school. The improvements had been due to several causes, but largely to better methods of diagnosis. The principal method in the diagnosis of intracranial tumours was still the clinical investigation of the case. Among accessory clinical methods one not used now as much as formerly was perimetry, but any patient suspected of brain tumour should have the visual fields examined very thoroughly. In clinical diagnosis disturbances of movement, sensibility, and vision were studied, and an inference made as to the location of the lesion from the clinician's knowledge of the pathways in the brain. On the other hand, *x*-ray examination was a means of cross-reference on the map of diagnosis—a direct visual method—and a most valuable check on any clinical signs. Not only might the situation of the tumour be revealed, but something might be learned of its type. Sometimes *x* rays, though unable to reveal the tumour itself owing to absence of calcification, did indicate an increase of vascularity converging to a point, and abnormally large venous channels in the skull with other vascular markings were quite clear indications of a tumour. A positive diagnosis of the presence of tumour could be made in 25 or 30 per cent. of all cases; therefore *x*-ray examination should be carried out in every suspected case.

A further development was ventriculography, whereby the lateral ventricles of the brain were depicted by *x* rays after the fluid content had been removed and air injected. This was a valuable method of localization of brain tumours in many different types of cases. The use of air in this way, however, was not without its dangers. In a patient unconscious or very drowsy with severe headache and papilloedema the use of air certainly added to the risk of operation. The usual procedure in the case of a tumour which could not be localized by clinical methods was to make a ventriculogram first thing in the morning, and start operating two or three hours later. Where intracranial pressure was already very high the chances of a successful result might be jeopardized by injecting the air. A similar method could be used without air injection by what was called ventricular estimation. A useful accessory method involved injection of thorotrast, a thorium oxide preparation, opaque to *x* rays. He believed that this method had a future before it, especially for the diagnosis of certain types of brain tumours.

Varieties of Intracranial Tumour

The varieties of intracranial tumour numbered eighteen or nineteen. It was no longer possible to talk about brain tumours in general, any more than to talk about abdominal tumours. Gliomas were the most common, and of these there were seventeen or eighteen histological types, ranging from the very benign to the very malignant. Many of the cranial tumours most favourable to treatment were gliomas, while among the most malignant was the gliosarcoma of the older writers. The benign type of glioma occurred very often in the cerebellum in young children. Endotheliomas were very slow growing, and it might even be fifteen years before papilloedema, headache, or loss of vision brought the patient under observation. This type of growth did not seem to interfere with the function of the motor and sensory pathways of the cerebrum very greatly, so that clinical diagnosis was somewhat difficult, and ventriculography might be useful. Mr. Cairns touched on other varieties of tumours. With regard to tuberculoma in the cerebellum, he said that this was best left alone, for in a person who had had tuberculous disease and who got a tumour in the brain, the result of trying to take it out might be to set up a severe miliary tuberculosis. It was well to do a decompression operation and leave the tuberculous mass severely alone.

In speaking of tumours in the pituitary region, Mr. Cairns said that it was not always realized that of pituitary adenomas those with grave acromegalic manifestations were relatively uncommon. There was another type of pituitary adenoma which did not produce much change in the habitus of the patient. The tumour grew silently, it destroyed the reproductive function, but patients came for medical treatment only when the tumour pressed on the optic chiasma and produced blindness, and the diagnosis was usually not made until someone carried out an *x*-ray examination of the sella turcica, or, finding that there was no error of refraction to explain departure from normal vision, carried out an extensive investigation of the visual fields.

Results of Brain Surgery

In discussing results Mr. Cairns said that until recent years brain surgery had been preoccupied with immediate mortality from the operation, but now a stage was being reached when the results were regarded much more critically. He himself had learned the work from Harvey Cushing eight or nine years ago, and recently he had been to America to find out what had happened to the patients during the year he himself had worked there. Of 157 patients operated on during that year twenty-two died

before leaving hospital—an operative mortality of 14 per cent. Most modern neuro-surgeons now had an operative mortality of 10 or 20 per cent., and Cushing before he retired got his own figures down to about 10 per cent. Of the remaining cases in this series seventy-two had since died, leaving sixty-three alive from seven to nine years after operation. Some of these people were maimed, not by operation, but by their lesions or by blindness, because the case had been allowed to go on too long before surgical treatment. But out of the whole group thirty-seven were really at work—about one in four of those who came under operation—and were living useful lives. That was not a bad result considering the relatively early stage of brain surgery.

At the close of the lecture, in reply to a question on the association of obesity with pituitary tumours, Mr. Cairns said that obesity, although it occurred with such tumours, was never found to a profound degree with tumours of the pituitary body itself, but rather with tumours in the third ventricle. He added a few words in acknowledgement of the everlasting debt of those practising brain surgery to the pioneer work of Horsley and Macewen, also of Ferrier and Hughlings Jackson and others, without whom intracranial surgery would never have reached its present position.

JUVENILE RHEUMATISM AND HEART DISEASE

At a meeting of the Section of State Medicine of the Royal Academy of Medicine in Ireland on February 28th, Dr. C. J. McSWEENEY read a paper entitled "Juvenile Rheumatism and the Prevention of Heart Disease."

The existence of a rheumatism problem in the Irish Free State, he said, was apparent from a study of the Registrar-General's returns relating to deaths from heart disease. No fewer than 1,500 deaths occurred there every year in consequence of rheumatic disease, some 250 of these in Dublin. No figures existed to show the incidence of acute and subacute rheumatism, but his impression was that the condition was at least as common as in the larger cities across the Channel. He stressed the need for recognizing that rheumatic manifestations in childhood were nowadays much more commonly subacute, and even subclinical, in character—a fact responsible for the replacement of the older term "acute rheumatism" by the modern and more precise "juvenile rheumatism." Subacute rheumatism was more likely to lead to cardiac involvement than was the acute because it was more often neglected. Where no special provision was made for rheumatic children no fewer than 60 per cent. developed organic heart disease; increasing invalidity supervened, with premature death about the age of 40. Most of the deaths classified as heart disease occurring at this age were traceable to rheumatism originating in childhood. Any scheme aiming at the prevention of heart disease must provide for the discovery of rheumatic children at an early stage of the malady. In this, school medical inspection (helped by school teachers, attendance officers, and public health nurses), the dispensary medical service, and the out-patient departments of children's hospitals should co-operate. Actual or suspected cases should be referred to a rheumatism supervisory centre, where cases should be fully investigated and examined by someone experienced in this work; those found to be suffering from early carditis could be either referred to their own practitioners, with suggestions as to treatment, or be admitted to a special hospital which, it was hoped, would be provided in the near future for those who were unable to receive appropriate rest and treatment in their own homes. Such a hospital should be situated in the country and provide facilities for open-air treatment. Probably not more than 10 per cent. of cases under supervision would require hospitalization at any one time, but supervision of all rheumatic children should be maintained at intervals of three months for the whole of school life. Previous to leaving school advice as to the choice of appropriate occupation for the child should be given. The control of juvenile rheumatism was largely a question of ensuring a correct regime of rest, sleep, diet, and clothing. When selecting suitable cases for hospital, and generally in assessing the activity of the rheumatic process, estimation of the sedimentation rate of the red cells was of great value. Dr. McSweeney gave an interesting summary of the physical signs observed in early cases of rheumatic carditis, and summarized the results obtained in the treatment of 598 cases treated in a special hospital in Cardiff between April, 1929, and June, 1934. Of 492 children admitted with early carditis during this period, 376 had normal hearts on discharge after an average of ten to twelve weeks' treatment. The relapse rate was also less in children who had been given a period of hospital treatment. The speaker concluded by expressing the hope that coming hospital developments in the Free State would include specific provision for children with early rheumatic carditis, which experience had shown was a condition so responsive to treatment as to render the prevention of heart disease a practical proposition.

General Discussion

Dr. W. R. F. COLLIS said that the attitude of the average clinical teacher towards rheumatic fever was apt to be depressing, but Dr. McSweeney's results with cases detected early were very promising. He thought that the estimation of the sedimentation rate was a great advance in that it enabled those cases to be recognized early. He agreed that the supervisory and hospital aspect of any scheme formulated should be in the hands of someone with a public health outlook. The incomplete removal of tonsils should be deprecated, since it did more harm than good to rheumatic children. Dr. KERRY REDDIN complained that little interest was evinced by the children's hospitals in rheumatic children. Public health authorities would be unable to take action until the children's hospitals agitated for rheumatism supervisory centres. Dr. R. E. STEEN said the problem was urgent. Rheumatism was a disease of malnutrition and faulty hygiene, and adequate rest for these cases was impossible in their own homes. He agreed that the term "juvenile rheumatism" was more exact nowadays than "acute rheumatism." Dr. DOROTHY PRICE asked whether Dr. McSweeney had found chorea to be more common in girls about the age of 12 who were working for examinations. Rheumatic children could not be properly handled in an out-patient department. Growing pains needed to be distinguished from true rheumatic pains.

Dr. T. T. O'FARRELL believed that rheumatic infection and chorea were very common in Ireland, more common even than indicated by Dr. McSweeney's cautious estimate. Parents and teachers should be taught how to recognize incipient chorea so that the disease could be tackled at an early stage. The important thing was not so much what abnormalities were noted on auscultation, but the recognition that all rheumatic children were potential cardiac cases. He thought the problem was one for parents, school teachers, and public health authorities rather than for clinicians. Dr. E. HARVEY stressed the need for research in relation to juvenile rheumatism so that its exact mode of origin could be discovered, and parents be instructed accordingly. Hygiene and diet played the major part, but infection entered into it also, and possibly vitamins were concerned. Dr. T. O. GRAHAM spoke of the evils resulting from tonsil-clipping as contrasted with the beneficial effects of complete enucleation.

Dr. ALAN THOMPSON referred to the difficulties of domiciliary treatment of these cases. Subacute cases had of necessity to be discharged prematurely from hospitals because of pressure on accommodation, although further rest was required. The signs of incipient rheumatism should be taught as well as those of the established disease. Dr. J. FALVEY mentioned that dispensary practice in Dublin revealed a great deal of juvenile rheumatism, and he thought that supervisory centres were the most urgent requirement. He asked whether erythema nodosum was now considered to be rheumatic. Dr. R. J. MAY said that the pulse rate in children was usually much

faster than in adults, and referred to the need of determining the normal in children. Dr. MARJORY BOOTH agreed as to the value of sedimentation rate estimations in assessing activity in subacute cases. The president (Dr. J. A. HARBISON) said that the detection of thirty rheumatic cases a week in the course of school medical inspection in his area showed how serious was this problem in Dublin. School medical schemes should discover rheumatic children, but could not treat them. Specific provision was necessary for those cases. Research would thereby be stimulated, and the exact aetiological part which environment, faulty hygiene, diet, and diseased tonsils played could then be assessed.

Dr. MCSWEENEY, in replying to the discussion, said that absolute rest in bed constituted 95 per cent. of the treatment of juvenile rheumatism. Severe cases of chorea became quickly quiescent with no other treatment than absolute immobilization. The maximum number of chorea cases occurred in girls between 10 and 12 years of age, and educational stress was often responsible. Pulse rates should be counted in sleep to discount emotional factors, and a sleeping rate persistently over 90 in a rheumatic child was suggestive of activity. Relapses sometimes occurred during hospital treatment, but were uncommon. A gradual return to normal activities was essential in convalescence. It was much easier to recognize non-rheumatic pains now that the sedimentation test could be performed in out-patient departments. The time for a tonsillectomy on a rheumatic child should be chosen with great care, and the removal should be complete. The influence of environment in causation, particularly dampness of houses, had possibly been exaggerated. Rheumatism in his experience had not been commonest among the poorest children. Erythema nodosum was very rarely seen in rheumatic children. Further research on rheumatism was required, and not less urgent was the need for education of students in the signs and symptoms of incipient rheumatic heart disease.

AGRANULOCYTIC ANGINA

At the last meeting of the Section of Laryngology and Otology of the Royal Academy of Medicine in Ireland, with the president, Dr. H. S. LAW, in the chair, Dr. T. G. WILSON read a paper on agranulocytic angina.

He said that this was a disease of the blood-forming system which resulted in the non-formation of granular leucocytes. It was of interest to laryngologists because usually the first symptoms appeared in the mouth or throat, white exudations occurring on the mucous membrane and rapidly developing into necrotic ulcerative patches, which tended to undermine the mucous membrane round its edges. The condition was striking because of the absence of local reaction and the non-formation of pus due to the deficiency of polymorphonuclears. The ulceration continued to spread, and was accompanied by fever and prostration. Death occurred in 90 per cent. of cases, usually rapidly. The aetiology was obscure. The condition might be caused by gross sepsis or by various previous illnesses, but was most often due to drugs, especially amidopyrine: 80 per cent. of cases occurred in women younger than 45. The pathology was as yet uncertain, but the disease appeared to be an arrest in the formation of granular leucocytes at the myelocyte stage. Lymphocytes and plasma cells were not usually reduced in number. Treatment of the blood condition was extremely important. Blood transfusion, liver therapy, and *x*-radiation of the long bones had been tried, but were not very successful. The most valuable therapeutic measure available seemed to be the injection of the sodium salts of pentose nucleotide. This substance was present in normal human blood, and it had been shown to be able to raise the white cell count in normal animals. Adenine sulphate, one of its breakdown products, had also been used. Dr. Wilson reported also a case which occurred in a woman, aged 85, who had been unwell for four days and on the fifth day took three doses of 5 grains of pyramidon for headache. That night she complained of a severe sore throat, with considerable pain on swallowing. Her temperature was found to be 104°, and the glands in the left submaxillary region were enlarged and very tender. A white fluffy exudate was seen filling the fold immediately behind the anterior pillar of the left tonsil, and at the mouths of some of the crypts of the tonsil further back. There was a striking lack of local reaction. On examination of the blood film not a single polymorphonuclear was to be seen, and the blood count showed only 195 white cells per c.mm. These were all lymphocytes, with the exception of one mononuclear. A swab from the throat yielded an almost pure growth of pneumococci. On the following day a gangrenous patch of about three-quarters of a square inch had developed on the affected tonsil; it had a bluish-grey appearance, which distinguished it from diphtheria. The mucous membrane was undermined slightly round the edges, leaving a sharp line of demarcation between the healthy and the abnormal tissue. The condition was now obviously a gangrenous ulcer on the tonsil, and still the absence of local reaction was remarkable. The patient lived for three days on the pentose nucleotide treatment, and then died suddenly from heart failure. A post-mortem examination was unfortunately refused. The most striking feature of this case was the fact that 15 grains of amidopyrine were apparently sufficient to cause the condition in an old lady.

CORRESPONDENCE

Oxygen Tents and Nasal Catheters

SIR,—I agree with Dr. E. P. Poulton (*Journal*, March 21st, p. 567) that the oxygen tent is preferable to any nasal catheter or mask method for prolonged administration of oxygen. The tent was, of course, introduced by Sir Leonard Hill in 1921. The catheter as used at present is very wasteful of oxygen. As it is of value for temporary administration, efforts should be made to reduce this waste.

Drs. H. L. Marriott and K. Robson (*Journal*, January 25th, p. 154), using a double nasal catheter, found that 8 litres of oxygen per minute were required to maintain a pressure of 40 per cent. atmosphere of oxygen in the alveolar air and 12 litres per minute for 50 per cent. of oxygen. With a single nasal catheter it is possible to maintain 40 per cent. oxygen in the alveolar air with only 4 litres a minute, and to maintain 50 per cent. alveolar oxygen pressure with only 5 litres a minute if an open box-shaped mask is used in addition. This box mask is 6½ in. in length, 4¾ in. in breadth, and 2½ in. in depth, with a capacity of about 1,000 c.cm. It is easily made of thin cardboard (or aluminium) covered with lint, and is closed on four sides only. Below it communicates freely with the air by a space 12 sq. in. (4¾ in. by 2½ in.). The side next the face is also covered with lint, and has a suitably shaped opening into which fit comfortably the nose and mouth. The eyes look over the top of the box, which is easily kept in position by tapes. The single nasal catheter passes through a suitable opening in the top of the box, and then passes 3 in. into the nasal cavity. The mask encloses a space (about 1,000 c.cm.) in which some of the wasted oxygen collects as it escapes from the nose or mouth. Some of the oxygen is thus rebreathed. With 4 or 5 litres of oxygen per minute and the ordinary rate and volume of breathing the carbon dioxide cannot accumulate in the box space to any harmful extent. This mask is very light and comfortable, and does not get overheated owing to its gas capacity. Fuller data will be given elsewhere.—I am, etc.,

J. ARGYLL CAMPBELL, M.D., D.Sc.

London, N.W.3, March 21st.

Methods of Bottle-feeding

SIR,—In the *British Medical Journal* of February 22nd an annotation appears under the heading "Modern Methods in Bottle-feeding" in which the methods adopted by the Mothercraft Training Society are criticized. The article refers to the amount of protein necessary for the artificially fed child receiving a cow's milk mixture, and the statement is made that:

"No one has ever produced scientific evidence that a moderate excess of protein in the diet does any harm, but protein deficiency will undoubtedly lead in the long run to slower growth, to a decreased resistance to infection, and possibly to other disorders less easily recognized. Dilute milk-and-water mixtures—that is, equal parts of each—present a risk of protein deficiency, and stronger mixtures are advocated by the majority of children's physicians in this country."

Since the Mothercraft Training Society has been specially named I feel called upon to reply.

The age of the child concerned is not specified, but I am assuming that the writer refers to the first nine months. To begin with, so far as I know, the optimum protein requirement for the normal infant has not yet been definitely decided upon. For the past eighteen years it has been the custom at the Mothercraft Training Society to advise the use of half-strength cow's milk mixtures giving a protein percentage of 1.6 with the addition of sugar and fat in the case of the normal bottle-fed child. The society now has the records of very large numbers of children fed in this manner; these cases have been carefully followed up, and both during the period of bottle-feeding and later there is ample evidence to prove that none of the conditions referred to by the writer of the article have been found to occur. Quite definitely the growth of these children has not been retarded.

On the other hand, a considerable number of cases have come under the care of the society in which malnutrition and digestive defects have undoubtedly been caused by an excessive amount of protein in the diet. Protein indigestion shows itself by the vomiting of protein curds and by the presence of hard protein curds in the stools; the child is restless, suffers from colicky pains, and passes an excessive amount of urine. If the high protein diet is continued it may give rise to an enteritis causing diarrhoea and loss of weight. It is, of course, admitted that certain conditions of nutrition not infrequently arise when high protein food is definitely indicated, and when this is so every effort should be made to present the protein in the most digestible form possible, otherwise it may not be assimilated.

Anyone who has had any experience of the artificial feeding of the infant knows that it is impossible to lay down hard-and-fast rules, but unless some sort of standard is set in the case of the "normal" child, methods tend to vary to extreme degrees—in other words, there is no method—and the child often pays for it dearly. The question of cow's milk protein percentage is very important, and is certainly one about which an open mind should be kept, but, judging by the results referred to above at the Mothercraft Training Society, I feel in a position to be able to confute the suggestions which have been made (they are purely suggestions, because there is no proof to support them), and in the case of the normal child dependent on artificial feeding my experience has proved that 1.6 per cent. protein—that is, half-strength cow's milk—is the most satisfactory dilution for the first eight to nine months.—I am, etc.,

REGINALD C. JEWESBURY, D.M.Oxon, F.R.C.P.Lond.

London, W.1, March 18th.

Supracondylar Fracture of the Humerus

SIR,—May I answer the friendly and helpful criticisms of Mr. Fairbank and Mr. Fagge? And may I say, lest I have been misunderstood, that the fourteen cases of Volkmann's contracture associated with supracondylar fracture occurred before, not after, I first saw them?

I agree that incomplete reduction adds very greatly to the danger of flexion, particularly in the presence of swelling. I was taught by Sir Robert Jones, and have never doubted, that complete reduction of the antero-posterior displacement was the first step, and that flexion (though never full flexion) was the second. But in those very rare cases in which subfascial swelling is widespread, and the tension extreme, flexion is impossible without vascular obstruction. I agree with Mr. Fagge that in some cases reduction is self-retaining, and that a wrist-sling at an angle of 90 degrees will do. But yet there are many patients, particularly young children, in whom flexion at an angle of between 60 and 75 degrees is necessary to safeguard the reduction. Flexion, never full flexion, is in such cases desirable; we agree that flexion is dangerous if reduction is incomplete; but I have seen at least two cases in which the swelling and tension were so great that fasciotomy and a short period of rest from further trauma with the limb at rest at an angle of 120 to 140 degrees seemed the only safe way of achieving the primary aim—the maintenance of circulation.

Finally, may I add that some of the worst cases were due to strenuous and repeated efforts to achieve perfect reduction by manipulation carried out in the presence of swelling. Operation will in such cases provide complete reduction, relief of tension, and, with these two conditions satisfied, allow sufficient flexion to guard reduction. But those fourteen cases, tragic and avoidable disasters, have made me anxious that, whatever his treatment of the fracture, the surgeon shall not leave his patient until he has satisfied himself that the circulation in the hand and forearm is good, and has given directions to ensure its maintenance.—I am, etc.,

Oxford, March 23rd. G. R. GIRDLESTONE.

Treatment of B. coli Pyelitis

SIR,—In the treatment of acute *B. coli* infections of the urinary tract I am in complete agreement with Dr. A. A. Osman's plea for thorough alkali medication (*Journal*, March 21st, p. 575). In the febrile case it acts as a specific if properly carried out. But in the chronic cases I am amazed at some of the statements made. Alkalis control the symptoms, but it is doubtful if they ever cure the condition. Dr. Osman apparently admits this, as he says:

"I have had cases on 400, 500, and more grains of alkali per diem for periods of over two years in whom any attempt at reducing the dose was immediately followed by a return of signs and even symptoms. In the majority of cases, however, the infection dies out in the course of a few weeks or months."

Now that we have mandelic acid one is tempted to ask why Dr. Osman does not cure some of these cases instead of letting them drag on for months or years. Dr. Osman's name is associated with the alkaline treatment of nephritis, and one cannot help feeling that he is a little prejudiced against anything with a *p*H of less than 7.0. Admittedly some cases recur after mandelic acid, and I am at present trying the effect of two days' treatment per month for this type. Perhaps for them we shall have to return to alkalis, but they are not the majority of cases so far as our experience shows at the present time.

Many mandelic acid cures have been followed for months without recurrence, and ketogenic diet cases for

some years. Many chronic cases previously treated by alkalis have been promptly cured by these methods, and although Dr. Osman expressly states that he does not wish to belittle their value, his paper gives the impression that they are somewhat dangerous methods to be used only in exceptional cases. Dr. Holling and I are about to publish a series of cases treated by mandelic acid or ammonium mandelate, which includes two cases of active nephritis accompanied by *B. coli* infection. In neither case did any harm result to the kidney.—I am, etc.,

Sheffield, March 23rd. ROBERT PLATT, M.D., F.R.C.P.

Glycosuria of "Lag Storage" Type

SIR,—Dr. Lawrence, in his article in the *Journal* of March 14th (p. 526) states that no further "attempt has been made to assess or explain" the "MacLean's lag" curve. Surely he is in error in this statement, seeing that considerable work has been done to show that these "lag storage" curves can be produced experimentally by other methods than intravenous injection of sugar and sugar administered through a duodenal tube.

It has been demonstrated by many workers that curves of this type can occur after a diet previously very low in carbohydrates in an otherwise normal individual, such a diet, for example, as the old hospital diabetic diet of ten years ago, or a ketogenic diet. A lag curve can also be produced if a portion of the body is, partially at any rate, put out of the circulation by elevating and binding up three out of the four limbs during the period of observation. There are a number of conditions in which a lag curve is commonly found other than following a gastro-enterostomy or rapid emptying of the stomach associated with duodenal ulcer. For example, Pemberton has shown it to occur commonly in severe cases of arthritis. It has also been found in approximately 50 per cent. of cases of recurrent staphylococcal furunculosis and in certain thyroid disturbances. It occurs in about 90 per cent. of obese males and 25 per cent. of obese females in whom no evidence of rapid emptying of the stomach has been discoverable.

While I in no way doubt the truth of Dr. Lawrence's observation that a lag curve can be produced by too rapid an absorption of glucose and consequent flooding of the tissues, it cannot be the sole explanation of this picture; some other factor must be involved in cases showing curves of this type. Furthermore, a lag curve can be changed into a perfectly normal curve in an obese subject in the course of a month or even less, by giving a diet high in protein and with the carbohydrate intake at the 120 gram level. It does not seem likely that this effect has been produced by slowing the rate of glucose absorption. It must be quite evident that if by dietetic measures alone a lag curve can be produced in a normal person in the course of forty-eight hours and can be caused to disappear in the short space of a month in an obese subject, Dr. Lawrence's explanation of the phenomenon is not the only correct one. A lag curve should always be regarded as evidence of the abnormal handling of carbohydrate, but whether this is due to too rapid absorption of glucose from the gut or from defective "storage" when absorbed must be determined by further examination.

Although a small proportion of individuals known to exhibit a lag curve have later been found to have become "diabetic," it is not known if diabetes starts with an error of this type. I have observed a few obese subjects who, starting with a mild lag type of curve, have progressively deteriorated to the extent of failing to reach the normal blood sugar level in over two and a half hours, thus giving what might be regarded as a diabetic curve. So far I have not succeeded in following a case through to the stage of developing clinical diabetes. I would definitely regard a lag curve as an abnormality, and one meriting further investigation.—I am, etc.,

London, W.1, March 20th. DENNIS EMBLETON.

Supply of Measles Antiserum

SIR,—I have read with interest your annotation on page 539 of the issue of March 14th, which draws attention to the unsatisfied demand for convalescent measles serum. It appears to me that the best means of organizing a supply of serum is through the medium of the public health authority in each district, and it may be of interest to describe the arrangements in Walthamstow.

At the beginning of the biennial measles epidemic early this year a letter was sent to all general practitioners requesting them to notify me of the names and addresses of any healthy adult who had contracted measles and was prepared to consider giving blood for the preparation of convalescent serum. Through the co-operation of the family practitioners concerned four such donors have already been found this year, and arrangements were then made for them to be conveyed to a central laboratory for the purpose of being bled. Approximately 350 c.cm. of blood has been obtained from each donor, yielding about 50 per cent. of serum. One-half of the resulting serum has been allocated for the use of the hospital concerned and the other half to meet demands in Walthamstow.

The serum is issued free to general practitioners for the protection of young children, for whom it is necessary when in contact with cases of measles. Preference is, of course, given to those doctors who have either this year or in past years provided adult donors.—I am, etc.,

A. T. W. POWELL,
Public Health Dept., Walthamstow, E.17, March 17th. Medical Officer of Health.

SIR,—Apropos my letter in your issue of February 29th on placental serum in measles, I have received a note and pamphlet from a pharmaceutical firm which intends offering a commercial standardized and potent solution of the globulin fraction of the placental protective substances in measles. From the pamphlet it appears that last year human immune globulin of placentas was used with very high satisfaction in America. It is called immune globulin owing to the use of pooled globulins of human placentas by McKhann and Chu. The comparative value of adult serum, convalescent serum, and immune globulin is shown in a table from a paper by Eley (*New England Journ. Med.*, 1935, viii, 213).

Procedure	Cases	Protected Per cent.	Modified Per cent.	Failed Per cent.
Adult serum ...	584	56.4	23.8	19.8
Convalescent serum	1,627	75.4	16.8	7.8
Immune globulin...	1,341	71.5	23.9	4.6

The pamphlet shows an immense reduction in the complications and severity of measles with use of this globulin, also a high protective power.—I am, etc.,

London, W.1, March 10th. A. G. AULD.

Anaesthetization of the Tympanic Membrane

SIR,—I would like to confirm Dr. Gavin Livingstone and Dr. Walker Ashcroft's statement in the *Journal* of March 14th (p. 557) that the cocaine and aniline solution used by the late Dr. Albert A. Gray for anaesthetizing the tympanic membrane prior to puncturing and injecting thyroxine does not congest the membrane so that the landmarks disappear.

I have been using Dr. Gray's technique for the last three months, and have experienced no difficulty. Six

patients have been treated, and out of these three have shown very definite improvement in their hearing ; I have been careful to give no other treatment except the thyroxine, so one can say that the improvement must be due to the thyroxine injection. I feel it would largely do away with the simplicity of the treatment if it was regarded as an operation requiring a general anaesthetic. —I am, etc.,

Folkestone, March 21st. C. B. ANDREAE, F.R.C.S.

"Neo-natal Dermatitis"

SIR,—Dr. I. Muende's letter on "Neo-natal Dermatitis" (*Journal*, March 14th, p. 555) raises several questions which cannot be answered without encroaching on your space.

With regard to nomenclature, Dr. Muende is under a misapprehension. "Pemphigus neonatorum" is not the original descriptive name of the lesion under discussion: in 1773 Ochène distinguished the non-syphilitic nature of the disease and classified it as "infantile pemphigoid." There are now seventeen synonyms for this disease, and it has been officially renamed twice. We create no precedent in referring to a disease attributed to a coccus as a "dermatitis," as the term "pyodermatitis" has been in the literature for some time, and is becoming increasingly popular. Dr. Muende apparently wishes to continue to classify this disease as "pemphigus," although the changes in the official nomenclature have been made with the object of removing it from the "pemphigoid" group, the bullae of which are sterile.

In the endemic at Mill Road Infirmary there were three types of cases:

1. Simple flaccid bullae.
2. Typical folliculitis.
3. Cases in which both bullae and infected follicles appeared at the same time.

Actually the fluid in even the early blisters was turbid and contained pus and cocci. When the septic focus was removed from the maternity unit all types of lesion disappeared from the unit.

Turning to aetiology: we stated that the organism isolated from our series of cases was a chromogenic staphylococcus. Much of the literature, including Leiner's work, cites *Staphylococcus aureus* as the causative organism. Dohi and Dohi, however, described an outbreak due in their opinion to *Staphylococcus albus*, and there are also outbreaks ascribed to streptococci. The conclusion drawn from a study of the literature is that the disease is pyogenic in origin.

It is true that the literature contains references to the association of "pemphigus neonatorum" and "impetigo contagiosa," and there have also been described many epidemics entirely unassociated with impetigo contagiosa. In the endemic at Mill Road Infirmary there was no such association. Some of the best descriptions of this subject are to be found in the modern American literature and textbooks on obstetrics.—We are, etc.,

H. A. OSBORN.
H. CARTER.

Liverpool, March 23rd.

Prominal in Epilepsy

SIR,—I was interested to read Dr. Millar Page's account of his experience with prominal in epilepsy, reported in your issue of March 14th. At Bristol City and County Mental Hospital we have tried this drug in place of sodium gardenal on four cases of epilepsy during the past year in order to ascertain if any better results could be obtained with prominal. The dose of prominal given was 3 grains b.i.d. instead of 1 grain b.i.d. of sodium gardenal. To effect the change-over gradually one dose of sodium gardenal per day was replaced by prominal for a week. An analysis of the result is as follows:

Case	No. of Fits while on Sodium Gardenal	No. of Fits while on Prominal
1	76 in 14 months	89 in 14 months
2	124 „ „	104 „ „
3	79 in 16 „	33 in 16 „
4	260 „ „	141 „ „

In all but one case the number of fits was reduced, and in Cases 3 and 4 the number was reduced by half. The greatest benefit was noted in the mental state of the patients. They were brighter, less irritable, and less troublesome, and are now usefully employed. Prominal in 3-grain doses does not cause any drowsiness, and no idiosyncrasy has been noted. It is impossible, however, to draw any definite conclusions from so small a series of cases, and observation on a larger series is now being carried out.—I am, etc.,

LEONARD BARBER, M.D., D.P.M.

Bristol Mental Hospital, Fishponds,
March 16th.

Midwifery in the Past and in the Present

SIR,—The closing sentences of the address given by Mr. Victor Bonney to fourth- and fifth-year students of the London medical schools and to newly qualified practitioners[1] must come as a great disappointment to those of us who owe so much to the inspiration and example of that gifted lecturer. No one who has lived through the past thirty years of medical history can believe other than that there was ample justification for obstetricians and gynaecologists to found some association of their own. None of us envisage either narrow specialization or a withdrawal from the whole comity of surgery, nor do we look forward to any partition of allegiance, much less a weakening of any service to the "older, broader faith." We have built up no image, the shrine at which we worship is coeval with time itself, and, were immortality vouchsafed to him to whom we all give ungrudging admiration, there is no doubt that he would one day approve our action.—I am, etc.,

London, W.1, March 23rd. J. BRIGHT BANISTER.

Cancer in the Far East

SIR,—Further particulars in connexion with the above subject may be of interest to some. Dr. D. S. Bryan-Brown, in his letter published in the *Journal* of January 25th, indicates that any of his colleagues working in North China could contradict the statement that cancer of the penis is uncommon among Chinese men. Having worked in Central China for over twenty years and seen a considerable number of such cases, I thought to go through some of the Rankine Memorial Hospital records. From them I find that thirty-seven cases of cancer of the penis have been treated during the last eleven years. This, however, is not the whole story. So many of these patients try all sorts of treatments first, and only as a last resource do they seek the help of the foreign doctor. By that time they are past doing anything for, and have to be sent home.

At the Buchanan Memorial Hospital for Women, in the same town, cancer of the breast is not a rare disease. Here also the disease is generally far advanced before treatment is sought.—I am, etc.,

Rankine Memorial Hospital, Ichang, Hupeh, Feb. 27th. T. CHALMERS BORTHWICK.

[1] *Supplement*, March 21st, 1936, p. 112.

Polythelia

SIR,—Mr. G. B. Richardson, in his letter published on March 14th (p. 556), says "the mammary tract has been concentrated at the cephalic end of the trunk in the human species and in the caudal end in other species such as the cow, mare, goat, and ewe, these being the most convenient situations for a sitting biped and a standing quadruped." But what about that survival of an earlier age, the elephant? She also feeds her young standing, but from two nipples situated between her forelegs. For protection the baby elephant walks between its mother's forelegs, and in that position it also suckles. The elephant's mammae and nipples are so nearly human in shape that it is the custom for women to be employed as wet nurses when needed in elephant camps.—I am, etc.,

Folkestone, March 15th. W. P. M.

Atmospheric Ionization and Influenza

SIR,—Experience in general practice in Rhodesia of the contrasts between negro and European led me, fourteen years ago, to the position of questioning the absolute nature of the germ causation of disease. I gave a lecture entitled "Environmental Influences affecting Blondes in Rhodesia." I find that I then said:

"That climatology has been neglected in favour of the exact study of germs and their effects there is ample evidence in the lack of works on the subject. Hence, though germs are the great *causal* factors of disease, we will not advance greatly unless we study both sides of the question of disease and its prevention. . . . The subject of electrical condition of the atmosphere—that is, the amount of free electrons (ions)—is an untrodden path . . . but as the electrical condition is brought about by the interaction of the other factors, and as heat, light, and chemically active rays are known to be electro-magnetic in nature, their resultant must be of importance, and calls for investigation."

This is quoted because it is my view that the issue ought not to be narrowed to ionization alone. To do this, leaving out the biological action of radiation, would induce premature and inadequate views and theories. The sifting of a great mass of data already in existence and the collection of further data is necessary. Unless this is recognized and its fallacy corrected somehow, and the wide variations of the clothing and nurture of different social classes and individuals also, we cannot be dogmatic.

The tenor of these remarks may be deemed to be far removed from the practice of medicine, though not from that of preventive medicine. These two together have largely abrogated the operation of the law of survival of the fittest as regards individuals. The gravest complications have arisen from this process and are present at this moment, both internally and externally. Who or what body is shouldering the unforeseen consequences? Medicine owes an enormous debt to the principle of evolution. But its issues have never been carried beyond the Darwinian stage yet.

It seems that while the progress of medicine and the effects noted are merely an expression of the general advance, it would be only natural that some light might be expected from the same profession, in order to aid those whose function it happens to be to deal with the consequences—that is, the statesmen. They can hardly be expected to have devoted time to acquiring biological knowledge. Darwin is intellectually fertile still; and it is interesting to know that already a research organization, or possibly two, are thinking about problems in this way—seeking a fuller knowledge of life reactions to environment and conclusions that may arise therefrom. New facts about ions may suitably lead the way to reconsideration of these matters, and possibly to equally unforeseen solutions of difficulties which are painfully patent.—I am, etc.,

London, W.6, March 15th. W. M. HEWETSON.

A Vacant Coronership

SIR,—The coronership for the Southern and Western Districts of the County of Essex was advertised twice in the *Times* last week at £900 per annum, out of which the coroner has to pay travelling, office, postage, stationery, and all other personal expenses, such as deputies' fees. The person appointed is required to devote the whole of his time to the duties of the office and not engage in private practice or in any other occupation for profit.

Application is being made to the Secretary of State to revise the coroners' districts, and the coroner will be required to act as coroner for the proposed new Southern District, which may quite possibly embrace a larger area but on the same terms and conditions. The qualification is five years' standing in either the medical or legal professions. The expenses enumerated, together with the payment of a deputy and assistant deputy, will approximate to £200 a year, and when the statutory deductions have been made the income tax will be about £100. This leaves a net income of about £600 for the upkeep of a county judicial office and the proper maintenance of himself and family in a manner befitting the position.

The last person appointed coroner by the Essex County Council was both legally and medically qualified, and it seems a most inadequate salary to offer to a professional man whose education and training have probably cost between three and four thousand pounds. Many officials in the employ of county councils are paid more than this net salary without any out-of-pocket expenses. The whole-time coroners in the neighbouring counties of Middlesex and Surrey are paid from £1,450 to £1,150 each, and it scarcely seems fitting that a professional man like a coroner, who is officially on duty day and night, should receive less than £1,000 a year with £150 for necessary expenses.

It should be noted that by the conditions of the appointment the coroner will not apparently be permitted to write a book or a play, or even sell his garden produce for profit! I feel that the terms of this appointment should be clearly brought to the notice of members of the medical profession.—I am, etc.,

F. DANFORD THOMAS,
H.M. Coroner for the City of London.

Golden Lane, E.C., March 16th.

Recruitment of Medical Men in a National Emergency

SIR,—In his interesting letter in the current issue of the *Journal* (p. 609), is not Lieut.-Colonel J. B. Scott committing a breach of one of the first principles in the correct execution of our professional work? In recognizing the gravity of the present international situation, he asks that immediate attention should be given to (*a*) the conduct of ordinary civilian practice, (*b*) the training of medical men in anti-gas measures in the event of war coming.

That these are questions requiring discussion among us may be true, for if the onset of war is inevitable then symptomatic treatment of the results alone is possible. There are, however, indications that many of our colleagues do not take such a hopeless and despairing view of the situation, and that they are prepared to throw their weight behind those forces making for peace, and against

those making for a world catastrophe, war, and barbarism. In evidence of this one has only to turn to your columns—to the manifesto on War and Peace signed by 350 psychiatrists, to the medical protest recently organized against the bombings of the Red Cross in Abyssinia, and to numerous letters on the subject. Can it be disputed that those who are so conducting themselves are acting correctly in insisting on serious efforts at diagnosis and prevention before falling back on the mere palliative treatment of troublesome symptoms?—I am, etc.,

HARRY C. BOYDE, M.B., B.S.

London, E.16, March 22nd.

Medical Art Exhibition

SIR,—The second exhibition of the Medical Art Society, which was successfully founded last year, will be held in July. It is proposed that the members dine together before visiting the exhibition. A certain number of frames of stock size will be available for the exhibits of country members. Will those who wish to join the society, the subscription to which is one guinea, send their names to the honorary secretary, Professor Pannett, at St. Mary's Hospital.—I am, etc.,

LEONARD HILL, President.

St. John Clinic, S.W.1, March 23rd.

Medico-Legal

USE OF TITLE "DOCTOR"

Successful Prosecution at Brighton

The magistrates at Brighton Petty Sessions gave an interesting decision on March 11th, in which Francis D. Deacon of 12, Richmond Place, Brighton, was convicted under Section 40 of the Medical Act, 1858, for unlawfully describing himself on his plate and notepaper as "Doctor Deacon."

Mr. G. D. Roberts, counsel, instructed by Messrs. Hempsons, solicitors to the Medical Defence Union, who prosecuted, said that the accused described himself as "Doctor Deacon" on his plate and notepaper, and, coupled with that description, held out to the public that he practised some sort of healing art. Mr. Roberts invited the bench to hold that the use of the title "Doctor" coupled with medical practice could only mean to the public that the practitioner was a doctor of medicine. Detailing the correspondence which had passed between the Medical Defence Union and the accused, Mr. Roberts said that in September, 1934, the accused had been calling himself an osteopathic physician and surgeon and not a doctor, and that after a certain amount of argument he had changed his title to "Osteopathic Practitioner." In November, 1934, the Paignton justices had dismissed a summons against Captain Horace Barrow* for using the title of "manipulative surgeon" when he was not registered. No doubt encouraged by this decision, the accused had begun to call himself an "osteopathic manipulative surgeon practitioner." In May, 1935, when the Paignton case was on its way to the Divisional Court for appeal, the accused dropped the title "surgeon" and for the first time called himself "Doctor." After the decision of the Divisional Court that Captain Barrow had been wrong to call himself "manipulative surgeon," the accused had blossomed out fully and completely as "Doctor Deacon, Osteopathic Practitioner."

The magistrates heard evidence that a clerk in the employ of the Medical Defence Union had received a letter from the accused in which he described himself as "Osteopathic Surgeon and Practitioner"; and from a lady resident in Hove, who had received a letter from the accused asking her to go and see him, as he noted that she was suffering from rheumatic trouble. An inquiry agent said that a plate outside the accused's premises was inscribed "Doctor Deacon, Osteopathic Manipulative Practitioner (British School Reg.)." He had called, and been treated by the accused.

* *British Medical Journal*, 1935, ii, 879, 1028.

Mr. Erik Rhodes, solicitor, did not call any evidence. In argument he referred to the wording of Section 40, which forbids the wilful and false use of the name or title "... of a physician, doctor of medicine, licentiate in medicine and surgery, bachelor of medicine, surgeon, general practitioner, or apothecary. . . ." The Act, he pointed out, forbade the use of the name doctor of medicine, not doctor, a title which was used in connexion with degrees or diplomas granted for many different subjects and sciences. No one seeing the accused's plate, notepaper, or advertisements would suppose that he was a registered medical practitioner.

The justices found that the accused had offended against Section 40 of the Medical Act, 1858. Evidence was then given that the accused had been convicted on numerous occasions of larceny and fraud between 1898 and 1933. He was fined £20 and £10 costs, or two months' imprisonment.

Universities and Colleges

UNIVERSITY OF OXFORD

In Convocation on May 5th a proposal will be submitted for conferment of the honorary degree of D.Sc. on Sir Cuthbert Wallace (President of the Royal College of Surgeons of England), Sir Walter Langdon-Brown (late Regius Professor of Physic in the University of Cambridge), Dr. Robert Hutchison (President of the Royal Society of Medicine), Dr. Charles Singer (Professor of the History of Medicine, University of London), Sir Henry Dale, F.R.S. (Director of the National Institute for Medical Research), and Sir George Newman (late Chief Medical Officer to the Ministry of Health and Ministry of Education.

A. P. Meiklejohn, B.Sc., B.M., has been elected to a travelling scholarship on the foundation of Dr. John Radcliffe.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examinations indicated:

D.P.H.—*Part I:* J. D. Bryan, W. N. M. Mason, T. H. Pierce, F. Pygott, H. R. Shone, Edna L. Smart, B. A. Taylor, Mary M. Thomson, T. P. Twomey.

DIPLOMA IN TROPICAL MEDICINE.—W. Barnetson, A. Boules, D. L. Cran, N. G. Gandhi, *R. G. Ghoshal, A. G. Hiremath, M. T. Ismail, B. B. Mukerjee, W. Murray, M. S. Rao, J. G. Slimon.

DIPLOMA IN TROPICAL HYGIENE.—W. Crawford, K. O'Toole, S. K. Ting, T. P. Tu.

* Recommended for the Milne Medal.

UNIVERSITY OF LEEDS

A meeting of the Council was held on March 18th, with the Pro-Chancellor in the chair.

In receiving with regret the resignation of Professor J. Kay Jamieson from the chair of anatomy, the Council passed a resolution recording its warmest gratitude to Professor Jamieson for the exceptional services he has rendered to the Council, the Senate, and the Medical School during the long period of forty-one years, in the course of which he has been dean of the Medical Faculty and a member of the University Council continuously for eighteen years.

"His colleagues on the Council, Senate, and the Board of the Faculty of Medicine have long recognized and relied upon his wise judgement, his tact, his ingenuity in handling difficult situations, and his uniformly imperturbable good temper in the conduct of business. He has guided and guarded the interests of the Medical School in the complexity of its relations with the various hospitals and public bodies with which it is associated. He has seen it, under his leadership, rise from small estate to a position of high distinction among medical schools of the country. And throughout his time of office he has secured and retained the loyalty of the medical staff, the confidence of the University authorities, and the affectionate regard of the students."

Mr. J. C. Gillies, M.B., Ch.B.Leeds, F.R.C.S.Ed., was appointed honorary demonstrator in anatomy.

NATIONAL UNIVERSITY OF IRELAND

A meeting of the Senate was held on March 12th, when it was decided that a Travelling Studentship in Physiology, as an additional travelling studentship, should be offered for competition in 1937, the course to be the same as that for 1935.

The degree of M.D. was granted to Michael P. O'Connor, M.B., B.Ch., B.A.O., University College, Dublin.

The Senate reappointed Dr. T. Donovan to the Lectureship in Materia Medica, and Dr. E. V. Cantillon to the Lectureship in Therapeutics, both at University College, Cork.

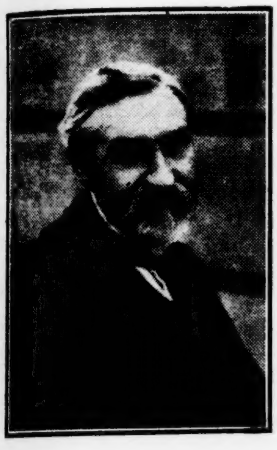
Obituary

SIR JAMES SMITH WHITAKER

Late Senior Medical Officer, Ministry of Health; formerly Medical Secretary, British Medical Association

For the following memoir of Sir James Smith Whitaker, who died at Farncombe, Surrey, on March 22nd, we are indebted to Dr. Alfred Cox:

The sudden death of Sir James Whitaker removes a great public servant, a medical statesman, and one who has left an indelible mark on the history of the British Medical Association. He was born in 1866 and was educated at Manchester Grammar School and Manchester University. He took his M.R.C.S. and L.R.C.P. in 1891, and started practice at Great Yarmouth. He became organizing secretary on the medical side of the B.M.A. in 1902 (Medical Secretary 1904). He was appointed deputy chairman of the National Health Insurance Commission in 1912, and on that body becoming part of the Ministry of Health in 1919, became senior medical officer of the Ministry and head of the medical department of the National Health Insurance section. His well-earned knighthood came in January, 1931, and he retired from the Ministry on reaching the age limit in December, 1932. He leaves a widow and family, including two sons in medical practice.



I first met Whitaker at the historic conference at Manchester in May, 1900, and was at once impressed by his great ability, though at that time he was in favour of starting a rival body to the B.M.A. and I was strongly against it. That conference was called by the Manchester Medical Guild to consider the need for an improvement, on the medico-political side, of the existing organization of the profession. The conference was attended by fifty-four delegates of local medical bodies, including those of seven branches of the B.M.A. There were present all the makings of a serious break-away from the B.M.A. Whitaker, coming from Yarmouth where they were smarting under some of the worst abuses of contract practice, took the lead in proposing the establishment of a new body, and he, then quite unknown to the profession outside Yarmouth, produced a great effect on his audience. However, the conference agreed to give the B.M.A. another chance and appointed a committee, of which Whitaker was a member, to enter into those negotiations with the Council which led to the setting up of a Constitution Committee and finally to the complete reconstruction of the Association on the medico-political side. In all these proceedings Whitaker took a pre-eminent part. As the *History of the Association* says, Horsley was the "great driving force in the movement" and Whitaker "the chief draughtsman who put Horsley's principles into practical form." From those days to the end of 1911, when he left to join the National Health Insurance Commission, Whitaker was the chief figure in the movement which transformed the B.M.A. into the great national organization which it now is. His grasp of principle, his attention to detail, his sagacity, his eloquence, his phenomenal memory, his great attainments as a draughtsman, his gift of logical persuasion, all combined to arouse in the body of the Association a new spirit. I am glad to remember that when the Council in 1902 resolved to appoint an organizing secretary, and I (then a young member of Council) was nominated as a candidate, I withdrew at once, saying that I could not dream of being put in competition with one who by character and achievement was the very man for the post.

During the next six years as a Branch and Division secretary I was brought much into contact with him, and the more I saw of him the deeper grew my admiration for him, and also my awe of his really extraordinary capacity for work. With a very small staff, of which Dr. A. D. Macpherson and Mr. Coulson were original members, he proceeded at once to lay the foundations for the struggle which he foresaw. It was he who initiated and carried out that inquiry into contract practice which is now one of the B.M.A. classics. It became the basis on which the successful resistance of the Association to the original Insurance Bill was founded. And he initiated many original departures on the medico-political side. I joined him as Deputy Medical Secretary in 1908. He wasn't always an easy man to work with, at any rate for a man of a much more impulsive character. I often felt impatience with his methods, which I thought paid undue attention to refinement of detail and led to unnecessary delays. But I nearly always found that there was a good reason behind his methods, and no man ever had a chief who was better worth following. "Statesmanship" is the word which always recurs to my mind when thinking about him. He was widely read, had a most acute political judgement, and could see further into the future than most men I have met. I never knew him lose his temper, though he often had good reason to do so. I didn't see much of him out of office hours, but one always felt that, apart from his work, his family life was the only thing that counted.

During the Insurance Bill fight he showed generalship of the highest order, which was freely recognized by the galaxy of politicians and civil servants before whom he had to represent the Association. He was exceedingly subtle in argument, very clever at spotting the weak places in an enemy's argument, and equally good at disguising the weak places on his own side. The principle which guided him throughout the whole campaign was that the claims of any class must be subordinated to, and co-ordinated with, the needs of the whole community. But nobody could have been more stubborn than he was for the recognition of the just claims of the body he was fighting for. The strain of these negotiations during 1910–12 told heavily on him, and seemed to me to age him. To the external opposition was added the less bearable friction with those inside the profession who were not able to take the long view that he did. When he was offered, and accepted (after consulting the Council), the position of Deputy Chairman of the Insurance Commission the current of suspicion broke into a storm which deeply moved him, though I never heard him complain, nor did it sour him, as it well might have soured a lesser man. I always felt that he was much misjudged and misunderstood.

His selection by Mr. Lloyd George was a natural one, for that astute politician saw that he was the one man he had met who combined all the necessary gifts for a very important—indeed, a key—post. It is unnecessary further to revive the memories of an exceedingly difficult time, but those of us who had to carry on at the headquarters of the B.M.A. knew what a great blessing it was to have somebody in his position who really understood professional problems, and not from the academic point of view only. I can say with complete sincerity that in his new post I always found him as helpful as he could be with proper regard to his official duties. I believe that it was mainly his association with that great civil servant

Sir Robert Morant which has led to the evolution of our national health insurance system on lines in which the medical profession could, and did, co-operate.

With the war came a great opportunity for the collaboration of the Insurance Commission with the British Medical Association in dealing with the medical service of the war. Whitaker's work during those years was invaluable, and nothing is more certain than that the service which the B.M.A. was able to give the country would have been much less efficient than it was had it not been for the way in which Whitaker and Morant helped. And not only in person, for they placed at the disposal of the Central Medical War Committee all the resources of their department.

I must leave others to deal with his departmental work. I can only say that nobody was more pleased than his old colleague when he received his knighthood. But of his work for the Association and his profession I *am* in a position to speak. It is one of the privileges of my life to have worked so long in association with him. I have no hesitation in saying that to him and Horsley (a great combination) as much as to any men since its Founder, living or dead, is due the great position which the Association rightly holds in the life of the community. A. C.

The following note refers to Sir James Smith Whitaker's period of service in Whitehall:

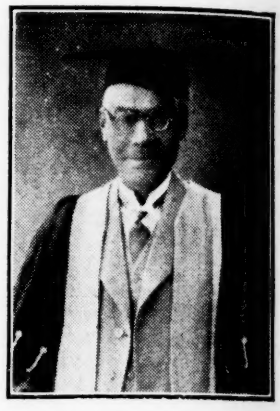
Whitaker's exceptional dialectical ability and logical mind, coupled with administrative capacity of a high order and a profound knowledge of the purpose and machinery of the National Insurance Act, enabled him to utilize his wide experience of the medical profession and its ideals in helping to construct a scheme within which doctors who accepted service could work satisfactorily. Shortly after his appointment as vice-chairman of the Insurance Commission the great war broke out. Throughout the difficult years that followed he played a prominent part in organizing and conserving the medical man-power as well as the medical supplies of this country, and was chairman of an influential committee charged with suggesting measures of economy to the medical profession in connexion with those drugs and medicines of which there was likely to be a shortage. When in course of time the Regional Medical Service was inaugurated by the Minister of Health the foundations upon which that service was based were in large measure laid by him, and so truly that they have endured to this day. Whitaker's eminent services were recognized by the bestowal of a knighthood in 1931. He retired in 1932. His dynamic personality and the originality of his conceptions impressed all who came into contact with him. He gave his best, and his best was very good.

At the funeral service at Hendon Parish Church on March 26th the British Medical Association was represented by the Treasurer, Mr. N. Bishop Harman, and Dr. Alfred Cox.

SIR KEDARNATH DAS, C.I.E., M.D.

We announced last week with regret the death, at the age of 69, of Sir Kedarnath Das, Principal and Professor of Midwifery and Gynaecology of Carmichael Medical College, Calcutta. India has lost perhaps her greatest obstetrician and this country a good friend and colleague. Kedarnath Das was educated at the Scottish Churches College and at Calcutta Medical College, where he graduated in medicine in 1892, gaining the M.D. in Madras in 1895. He worked as a registrar in the Medical College Hospital for some seven years before taking up a position as teacher in midwifery at Campbell Medical School, Calcutta, in 1899. His career as a medical student was a distinguished one, and full of that promise which he so amply fulfilled. He was professor of obstetrics and gynaecology at the Carmichael Medical College and obstetrician and gynaecologist to the attached hospitals from 1919, and in 1922 became Principal of the College. He had been the dean of the Faculty of Medicine at Calcutta University and a member of the Bengal Council of Medical Registration and of the governing body of the State Medical Faculty of Bengal. He became a member of the British Medical Association in 1901, was a vice-president of the Calcutta Branch from 1928 to 1930, and president for the next three years.

His publications were numerous, and indicative of the wideness of his clinical experience and outlook. His early publications included, for instance, notes on diabetes, idiopathic tetanus, hepatic abscess, and cerebral tumour. He contributed largely to the *Indian Medical Gazette*, but articles of his may be found in almost all the English, Indian, and American medical journals. His first book, *A Handbook of Obstetrics* was published in 1914, followed in 1920 by *A Textbook of Midwifery*, which is still regarded as a classic. His greatest work, however, was *Obstetric Forceps*, published in 1928. This took him over twelve years to compile, and will remain an enduring monument to his knowledge and patience.



He toured Europe and America collecting material for this last book, and was made an Honorary Fellow of the American Gynaecological Society, and the American Association of Obstetricians, Gynaecologists, and Abdominal Surgeons. He was also a Foundation Fellow of the British College of Obstetricians and Gynaecologists. In 1918 he was created C.I.E. in recognition of his already large services to medicine in India, and his knighthood in June, 1933, was a deserved tribute to an Indian who for forty years had striven to reduce maternal and infantile mortality in the country of his birth.

Mr. V. B. GREEN-ARMYTAGE writes: It was with great sorrow that I learnt of the passing of Sir Kedarnath Das. For twenty years I sat with him on committees and knew him as a co-examiner. He was a most lovable character with a Puck-like sense of humour. His most absorbing interest was anything to do with medical education and health welfare in India. Many a battle-royal he raised in the Senate of Calcutta University; but if *fortiter in re* he was *suaviter in modo*, and for this reason had no enemies. Standing well over six feet in height, he had the physique of a giant, and this he needed, for besides innumerable consulting and administrative duties, he was ever engaged in the output of books and articles. The work by which he will always be remembered is a masterpiece of 900 octavo pages, *The Obstetric Forceps*; indeed, it is the only special book on this subject published in the English language. I had the honour of reading and correcting the final MS. proofs of this work, which had taken twelve years to compile and included over 2,000 references. His own library was his hobby, and many an afternoon I have spent there while he delved into an air-tight compartment and brought with pride to the light some old first edition, such as Harvey's *De Motu Cordis*. His literary taste was catholic, for his knowledge of English was perfect; indeed, I remember his showing me a facsimile of Oliver Cromwell's Bible, on the fly-leaf of which was written "If we cease to become better, we cease to be good," and I recall that he told me that hardly a session went by that he did not repeat that advice to a very large class of students. He was beloved by all

for his dignity, charm, integrity, and personal merit, and no honour gave his professional brethren in India more pleasure than that of his knighthood in 1933. His wonderful collection of forceps, bought and brought from many lands, he has presented to the Carmichael Medical Museum. An heirloom and memory of a great man. He took a boyish interest in physical activities, and when the Dum Dum Aero Club was formed I remember he was one of the first to join, and one of the first to make a flight over Calcutta, thereby inspiring the youth of Bengal to be air-minded.

Throughout his career loyalty to the Medical College and Eden Hospital, in which he had been the first Goodeve Scholar, was one of his greatest traits, and even when he was Principal of the Carmichael Medical College nothing gave him more pleasure than to attend the sports, prize-givings, or entertainments in his Alma Mater. Bengal's loss is India's loss. Kedarnath Das was India's greatest obstetric *guru*, for he was the first Indian to call attention to the need of Western methods for stemming its dreadful maternal and infantile mortality ; and this he did on the platform and in books and journals for forty years. He leaves two sons, one of whom is in the medical profession.

THOMAS BABINGTON GRIMSDALE, M.B.

Consulting Gynaecological Surgeon, Liverpool Royal Infirmary

Dr. Thomas Babington Grimsdale, who died on March 11th at Seaton, Devon, at the age of 79, had practised successfully as a gynaecologist in Liverpool for some forty years. He was born in that city in 1853, when his father, Thomas Frederick Grimsdale, M.D., was building up a large obstetrical practice and was already attached to the Royal Infirmary. He was educated first at Uppingham and Trinity College, Cambridge, afterwards proceeding to St. George's Hospital. He qualified M.R.C.S. in 1881, and then graduated M.B.Camb. in 1883 ; he had held the posts of house-physician and assistant medical registrar at the hospital. He then returned to Liverpool to join his father, being first appointed assistant medical officer to the Liverpool Hospital for Women and the Infirmary for Children. He later became surgeon to the hospital and to the Liverpool Royal Infirmary, and lecturer on gynaecology in the University. Much of his success as a gynaecological surgeon was due to the extreme carefulness of his professional work, as regards both aseptic precautions and the details of operative technique. He was an artist in his work as well as in his private life, a sound craftsman, and a methodical thinker. So, when he came to his classes in the medical school, he proved a convincing teacher. He was naturally prominent also at meetings of the North of England Obstetrical and Gynaecological Society, and had held office as its president. His written communications were not many, but were always distinguished by their practical note. In his earlier life he had been attached as a surgeon to the 4th Lancashire Volunteer Artillery, and when the late war broke out he gave most valuable assistance to the St. John Ambulance Brigade V.A.D. Hospital in Liverpool.

Dr. Grimsdale had joined the British Medical Association in 1883, and was vice-president of the Section of Obstetrics and Gynaecology at the Annual Meetings at Oxford in 1904 and at Liverpool in 1912. He retired from the staff of the Liverpool Royal Infirmary in 1921, being elected honorary consultant gynaecological surgeon, and then went to live at Seaton. He was married, but had no family, and thus the long medical connexion of his family with Liverpool has been terminated by his death. His younger brother, Mr. Harold Grimsdale, is consulting ophthalmic surgeon to St. George's Hospital.

The death took place on March 1st of Dr. J. H. MURRAY, a well-known practitioner of Stirling. He was born at Montrose in 1870, and after taking his medical course at Edinburgh University graduated M.B., C.M. in 1892, proceeding to the degree of M.D. in 1897. After acting for a time as assistant to the superintendent at Melrose Asylum, he became house-surgeon to Stirling Royal Infirmary, and later commenced practice in Stirling, where for over forty years he was one of the leading practitioners of the town. He was a keen Volunteer, and acted for many years as a combatant officer and later as surgeon in the Argyll and Sutherland Highlanders. For seventeen years he was consulting surgeon and physician to Stirling Royal Infirmary, and was also surgeon and physician to Whinwell Children's Home at Stirling, as well as being Parish Council medical officer for this town. Dr. Murray took a keen interest in ambulance work, and acted as lecturer for the St. Andrews Ambulance Association during thirty-six years, for which he was awarded the association's silver medal.

We regret to record the untimely death on March 5th of Dr. JOHN WILLIS BRYDON. Born in May, 1910, at Stockton-on-Tees, the son of Dr. John Brydon, he was educated at Stockton Grammar School, Durham School, and the University of Edinburgh. He graduated M.B., Ch.B. in 1932, and obtained the D.P.H. two years later. After holding house appointments at Stockton and Thornaby Hospital and at the General Western Hospital, Edinburgh, he joined the bacteriological laboratory staff at Edinburgh Infirmary, transferring later to the venereal department. He was for a short period clinical assistant to Simpson's Maternity Hospital, Edinburgh, and then joined the resident staff of the City Hospital, where he died. Dr. Brydon was a member of the British Medical Association and of the Royal Medical Society of Edinburgh. He was about to take this year the examinations for the M.D. and M.R.C.P. He died from streptococcal meningitis following mastoiditis and a streptococcal throat infection. His talents and character had won for him a large circle of friends in the medical profession, and great sympathy is felt for the bereaved parents.

Dr. ROBERT REID PIRRIE, who died at Eastbourne on March 22nd in his seventy-third year, had been practising there since the end of the war. He received his medical education at Newcastle-on-Tyne, Dublin, and Belfast. In 1903 he graduated M.B., B.S.Durh. and proceeded M.D. in 1910. Before the war he practised on Tyneside, where he had held the posts of surgeon for accidents at the Royal Victoria Infirmary, Newcastle, resident medical officer at the City Hospital for Infectious Diseases, and visiting physician to the Northern Counties Colony for Epilepsy and the Feeble-minded. He served in the war with the commission of Captain, R.A.M.C., and subsequently removed to Eastbourne, where he was appointed visiting medical officer to Eastbourne Infirmary. He was also senior medical officer to the Soldiers' and Sailors' Convalescent Home and examining medical officer under the Ministry of Pensions, and a district medical officer and public vaccinator. In 1927 his activities were limited by an attack of cerebral thrombosis, and three years later he retired. He had been a member of the British Medical Association since 1903.

The death is announced of Dr. ARNOLD NETTER on March 1st. Born at Strasbourg in 1855, he became professor of medicine in the University of Paris and honorary physician to the Trousseau Hospital. In 1904 he was elected a member of the French Academy of Medicine, and he was for many years a member of the Comité Consultatif d'Hygiène Publique. He made important contributions to the study of epidemic cerebro-spinal meningitis, suppurative meningitis, lethargic encephalitis, and poliomyelitis.

The Services

The King has approved the appointment of Professor J. Paterson Ross, M.S., F.R.C.S., as a member of the Civil Consulting Staff of the King Edward VII Convalescent Home for Officers, Osborne, Isle of Wight, as from March 11th.

DEATHS IN THE SERVICES

Surgeon Captain Octavius William Andrews, C.B.E., R.N. (retired), died at St. Briavels, Gloucestershire, on March 13th. Born in 1865, the son of H. C. Andrews, M.D., he was educated at St. George's, taking the M.R.C.S. in 1888, and at Durham University, where he graduated M.B. in 1887 and B.S. in 1888 ; he also took the D.P.H. of Cambridge in 1907. Entering the Navy in 1889, he became staff surgeon in 1899, fleet surgeon on July 2nd, 1903, and retired, with an honorary step as deputy surgeon-general, on July 26th, 1913. The title of rank as D.S.G. was subsequently changed to surgeon captain. From 1891 to 1904 he served as surgeon of H.M.S. *Ringdove*, when he made a report on leprosy and depopulation in the South Pacific islands, published by the New Zealand Government, for which he received the thanks of that Government. From 1891 to 1894 he was assistant instructor to surgeons on entry at Haslar. In 1898 he was sent as representative of the Navy to attend a course of instruction at the Pasteur Institutes of Lille and Paris on the use of Calmette's antivenene, and the treatment of hydrophobia and tetanus, for which he received the thanks of the Lords of the Admiralty. He subsequently served as staff surgeon and fleet surgeon of H.M.S. *Diana*, and again received the thanks of their Lordships, along with Captain E. J. W. Slade, R.N., for a report on the island of Cyprus. In 1899 he received the Chadwick gold medal and naval prize. In 1907 he was deputed as Admiralty representative to Berlin and Hamburg to attend the fourteenth International Congress on Hygiene and Demography. After his retirement Surgeon Captain Andrews held the post of medical officer of health for West Gloucestershire United Districts. He was the author of a *Handbook of Public Health Laboratory Work* and of *Seamarks and Landmarks*. During the war of 1914–18 he served on the Belgian coast in 1914, in Gallipoli in 1915, with the Grand Fleet in 1917–19, received the medals, and was made an officer of the Legion of Honour. In 1894 he married Florence, daughter of A. M. Ferrar, J.P., D.L., of Torwood, Belfast, and leaves a widow, a son, and two daughters. "C. O. C." writes: I have known and worked with Captain Andrews for some fourteen years, and I would like to pay this last tribute to a close friend and eminent colleague. He was well liked and very popular, and his passing has struck a terrible blow to the medical profession of this area. He was very well read, and his world-wide experience and store of knowledge made him a most interesting companion. Although quiet in demeanour and reserved almost to extreme, he had a very keen sense of humour, and enjoyed life to its fullness. To those who had the privilege of knowing him intimately, his distinctive personality, his meticulous routine and regularity, and whole-hearted enthusiasm for work and recreation made a strong appeal. As medical officer of health, his duties brought him into contact with people in every walk of life, and his sympathy and consideration, combined with his expert knowledge, gained for him the devotion and respect of all. In his passing, Gloucestershire has lost a most valued public servant, and I a very great friend.

Brevet Colonel Samuel John Thomson, C.I.E., C.B.E., Bengal Medical Service (ret.), died at Menton on February 27th, aged 83. He was born on January 17th, 1853, the son of John Buck Thomson, surgeon of Ramsgate, was educated at St. John's College, Hurstpierpoint, and at St. Mary's, and took the M.R.C.S. and L.S.A. in 1874. Entering the I.M.S. as surgeon on October 1st, 1877, he became lieutenant-colonel after twenty years' service, and retired, with an extra compensation pension, on January 17th, 1908. He served in the Afghan War of 1879–80, receiving the medal. In 1885 he took civil employ in the North-West, now the United Provinces, as a deputy sanitary commissioner ; in 1896 he was promoted to sanitary commissioner of the Province, and held that post, except during his deputation to South Africa, until his retirement. In 1902 he was appointed director of the burgher camps in the Transvaal, and received the King's medal for South Africa, with two clasps. In 1890 he was a member of the Commission on Leprosy in India. After his retirement he rejoined for service in the war of 1914–18, being appointed commandant of the 2nd War Hospital at Birmingham in June, 1915, for which he received a brevet colonelcy on January 1st, 1918, and the C.B.E. on June 3rd, 1919. After the war he served as medical superintendent of the Ministry of Pensions Hospital at Hollymoor, Birmingham. He received the C.I.E. on January 1st, 1898. He was the author of *Sanitary Principles for India*, 1883 ; the *Transvaal Burgher Camps*, 1904 ; *The Silent India*, 1913 ; and *The Real Indian People*, 1914, the two latter books giving a most excellent account of India from a point of view which visitors seldom see. In 1885 he married Isabel Gordon, daughter of Surgeon General A. J. Cowie, I.M.S., and had one son and four daughters ; she died in 1925, after which he settled at Menton.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons this week discussed the Consolidated Fund Bill and read the Unemployment Insurance (Agriculture) Bill a third time. The Sugar Industry Reorganization Bill passed through Standing Committee.

In the House of Lords the Public Health (London) Bill was down for second reading on March 26th.

The Annual Report of the Prisons Department for Scotland was presented to the House of Commons on March 24th.

The Midwives Bill to amend the Midwives Acts, 1902 to 1926, was presented by Sir Kingsley Wood in the House of Commons on March 18th.

In the House of Lords, on March 19th, the Royal Assent was given to the Milk (Extension of Temporary Provisions) Act, and to Joint Hospital District Acts for Bedford, Bury and District, Mid-Sussex, North-East Lindsey, and St. Albans, and also to the South Staffordshire Joint Small-pox Hospital District Act.

The Conservative Health and Housing Committee met at the House of Commons on March 23rd and discussed the Medicines and Surgical Appliances (Advertisement) Bill, which was down for second reading on March 27th. Captain G. S. Elliston explained the Bill. Questions were asked by members who were concerned about the rights of herbalists. It was also pointed out that the Bill as it stood might make illegal the advertising of the healing qualities of spas. A suggestion was made that a proviso safeguarding the publicity of spas might be added to the Bill in committee.

The House of Lords on Nutrition

In the House of Lords, on March 18th, the BISHOP OF WINCHESTER asked whether, as malnutrition was widespread in the country and a large milk surplus existed, the Government would extend further the provision already made to supply liquid milk to school children and to initiate a scheme on similar lines for expectant and nursing mothers and for children under 5. In speaking of the extent of malnutrition he recognized all that was being done by public services and by the Ministry of Health for the health of the people. Notwithstanding, the Minister of Agriculture had lately said in the House of Commons that there was a great deal of malnutrition in the country. Last week there had been issued *Food, Health and Income*, in which Sir John Orr, a great authority, concluded that the average diet of the poorest group of 4,500,000 persons was deficient in every constituent. The diet of a second group of 9,000,000 was deficient in all the vitamins and minerals required. The diet of a third group of 9,000,000 was deficient in several important vitamins and minerals. Sir John Orr concluded that a diet "completely adequate for health according to modern standards" was only attained by half the population. If the other half had a more sufficient diet they would be better off in health, vitality, and well-being, and a great deal of anaemia, bad teeth, and rickets would be avoided. Investigation in Newcastle, Manchester, Leeds, and Aberdeen confirmed these conclusions, though it was not true to say that all malnutrition arose from lack of food. Milk helped to supply these deficiencies. The Medical Research Council reported that milk

should be the chief diet of children, and that surprising benefits in height, weight, mental activity, and general health followed where a daily pint of milk was added to what was regarded as an adequate diet. In our schools 2,750,000 children now received cheap milk, but only one-third of a pint, and only five days a week as a rule. Something like 50 per cent. of the children in elementary schools were not receiving this milk. Women who were expecting children, women who were anaemic and poor, who did not come under the special provisions, or did not avail themselves of the facilities to obtain milk at some of the welfare centres would benefit by its provision, both for themselves and for their children. There was plenty of milk available. A quarter of the milk produced went into the factories at about a third of the price paid for the milk which the children consumed. In the factories the milk produced valuable foods, but the children needed it. Against the additional cost of such provision Parliament should set the saving in hospitals and medical services, which now were occupied in removing illnesses that might have been prevented by a better and more adequate diet.

Lord STRABOLGI said the Labour Party in the House of Lords supported the Bishop of Winchester. Nutrition should be considered with defence, for of 68,000 who applied for enlistment in the Army in 1935 only 28,000 were accepted. Lord RADNOR said a small reduction in the price of milk would have no effect on the consumption. A reduction of not less than twopence a quart was needed before they would see an increased consumption. Such a reduction in price could only be compensated by a 20 per cent. increase in consumption.

The Scope of the League of Nations' Investigation

Lord ASTOR said an experiment was in progress on 8,000 children to test the relative values of raw and pasteurized milk in different quantities. Besides the recently published Orr-Lloyd report and the annual report of the Medical Research Council, there was a most important and unanimous report by an international commission of experts which met in London. This last stated that there was a real problem of malnutrition, and that milk was one of the most important diets. The League of Nations had set up a committee, of which he was chairman, to inquire into nutrition and public health, and into the repercussions on agriculture and economics of an improved nutrition policy. This committee would, next September, present an interim report to the Assembly of the League. A suggested standard of nutrition was being sent to scientific bodies in every country with a request that they should say whether they accepted it as right, or whether, because of climate or anything else, there should be national modifications. When the replies were received there would be a correct standard of nutrition for every country, which was essential for a nutrition policy. A questionary had also been sent to all Governments asking what they were doing to improve the nutrition and feeding of their people. Each country would then be able to compare what was being done in other countries. Lord Astor's Committee also informally urged Governments to deal with the problem straightaway. In the interim report they would only deal with the Western World. At some future time they would deal with the Far East, where the problem of malnutrition was far more serious. Lord Astor agreed with what the Bishop of Winchester had said about milk. If all the children got the milk which according to the London experts they ought to have, the average expenditure on milk alone per child would range between 2s. and 3s. a week. Obviously a subsidy had to be provided. Was the country to subsidize out of the taxpayers' money the women, the pre-school children, the elementary school children, the children who did not attend elementary schools, the hospitals, and other institutions? The burden would be enormous, and before undertaking it Parliament must be satisfied that the milk was being produced at as cheap a price as possible. Lord ELTISLEY said the price level of milk must be maintained at an economic level in the general national interest. He drew the attention of the House to the schemes prepared for supplying milk to the Special Areas, which provided for the co-operation of the producer, the consumer, and the Commissioner for the Special Areas of the Treasury. The Commissioner had set aside £50,000 for trying out this experiment.

The Government's Nutrition Inquiry

Lord LUKE said that in 1935 the Government decided to reconstitute with wider terms the Standing Advisory Committee to the Ministry of Health on nutrition. Lord Kennet, then Minister of Health, invited Lord Luke to become its chairman. The Committee was asked to inquire into the facts, quantitative and qualitative, in relation to the diet of the people and to report on any changes which appeared desirable in the light of modern advances in the knowledge of nutrition. The task would take much time, and he trusted the Committee would not be asked to issue reports in haste upon matters which could not properly be considered in a hurry. His colleagues on the Committee were fully qualified for the task. They included, in addition to representatives of the Government Departments concerned, Dr. G. F. Buchan, Professor E. P. Cathcart, Dr. A. Bradford Hill, Sir Frederick Gowland Hopkins, Dr. Donald Hunter, Professor E. Mellanby, Sir John Boyd Orr, and Mrs. Chalmers Watson. The Committee had set up physiological, statistical, economic, and social subcommittees, which were collecting and testing information; the latter was nearly always copious and frequently conflicting. The Ministry of Health had asked the Committee to examine Sir John Orr's book *Food, Health and Income*. Much of the information used in that book was considered by the Committee months ago, but it was of opinion that a good deal of the data were insufficient to justify far-reaching conclusions. Nevertheless the publication would enable the hypothesis put forward by Sir John Orr to be more fully examined. The Committee thought that to reach satisfying conclusions further investigations should be made as to family budgets and the frequency distribution of weekly earnings. Accordingly the Committee had recommended to the Minister that investigations of this kind should be undertaken. Sir John's book gave no reason to doubt that the nutritional standard of the country was improving. In the last ten years there had been substantial improvement despite widespread unemployment. Lord Luke added that his Committee fully endorsed the views now generally held about the consumption of milk. It had produced a report on the nutritive value of milk. This report had been presented to the Minister of Health, and would be published shortly. He hoped that the Government, in replying to the debate, would indicate that it would consider favourably proposals for the increased supply of milk to nursing mothers and children.

Lord ELTON said the House should remember, in considering what Sir John Orr said about relative heights in various age groups of children, that environment and heredity should also be considered. The problem must not be isolated. The House should also remember that Sir George Newman, in 1933, said the nutrition of the English people was better than at any past period of which there was record. That was the pre-Orr view. To-day they knew that by giving children selected food, and particularly milk, their weight could be increased 40 per cent. and their height 80 per cent. over the normal growth for those years. The problem was to extend an advantage of that kind over the whole of the population. An advance was taking place in the required direction. How could they accelerate it? Not by paying a subsidy to keep milk up to 5d. in summer and 6d. in winter, while they had a surplus of 250,000,000 gallons a year, of which he believed some to be exported as condensed milk to foreign countries. Would it be possible to take a special area, make a cut of 25 per cent. in the price, and test the effect of that cut on demand?

Lord GAGE, replying for the Government, thanked the Bishop of Winchester for initiating the debate. He said the phrase "widespread malnutrition" should be treated with reserve. Malnutrition could not easily be defined, and its diagnosis was often a matter of personal opinion. How far the dietaries of the community were adequate to promote and maintain full health was the problem to be considered, and not whether the people received sufficient food to maintain life. They must take into account the high standard of living in this country compared with other countries, and also the steady improvement both in standards of nutrition and in public health. Sir John Orr's recent book recorded a substantial increase in the consumption of most of the principal foods since before the war, and the rate of increase had been greater since 1924–8 than in the previous fifteen

years. To make better use of surplus foodstuffs of high nutritional value in the interests both of public health and of the agricultural community involved economic and political problems. Large-scale subsidy of the supply of foodstuffs would give rise to serious difficulties. The Government, however, did not think advance was impossible. With the assistance of the Advisory Committee it had given close attention to the newly acquired knowledge on nutrition, and recognized that of all foodstuffs milk, from the nutritional view, was most important. The milk-in-schools scheme, instituted on October 1st, 1934, covered all children in grant-earning schools and adolescents attending junior instruction centres aided by the Ministry of Labour. The Milk (Extension and Provisions) Bill, which had recently passed the House of Lords, would continue the scheme till the end of September, 1937. Under Section 84 of the Education Act, 1921, 275,000 children in public elementary schools in England and Wales received free milk, often two-thirds of a pint or a pint daily. Finally, under Section 1 of the Maternity and Child Welfare Act, 1918, practically all the 422 maternity and child welfare centres in England and Wales provided some free milk or milk at less than cost. The annual consumption of milk at these centres was roughly estimated at 3,500,000 gallons of liquid milk and 5,000,000 lb. of dried milk. The Ministers of Health and Agriculture had examined the possibility of further extension and encouragement of these milk schemes. The whole question of the organized marketing of milk in Great Britain and its incidence on production, distribution, and consumption was under examination by the Milk Reorganization Commission. It would be premature to introduce a new scheme for the provision of milk till the Commission's report had been received and decisions taken on the recommendations. In the meantime the possibilities would be explored.

The BISHOP OF WINCHESTER, in thanking Lord Gage for his reply, expressed disappointment that the Government could not offer a more constructive and hopeful statement.

The Spahlinger Experiments

Sir FRANCIS FREMANTLE asked, on March 19th, whether adequate experiments were being made in this country to check those in Northern Ireland on the Spahlinger vaccine for the prevention of tuberculosis in cattle; how long these experiments would take; and whether, if the vaccine proved successful, the Minister would take steps to secure its general adoption. Dr. ELLIOT replied that he was in close touch with the work that had been and was being carried out in Northern Ireland in connexion with the Spahlinger vaccine. The question of conducting tests with the vaccine in this country was under consideration. He was not yet in a position to make a statement as to the scope or duration of any experimental work which might be undertaken.

Maternity Services and Sums Appropriated Under Local Government Act

Captain ELLISTON, on March 19th, asked the amount of money expended each year since the Local Government Act, 1929, came into operation on the development and expansion of maternity and child welfare services out of the £5,000,000 appropriated under Section 86 of the Local Government Act, 1929, as an annual sum during the first fixed grant period to provide for the development of local social services; and whether any unexpended balance in each year had been allowed to accumulate to provide for further expansion in ensuing years. Sir KINGSLEY WOOD replied that this £5,000,000 formed part of the annual general Exchequer contribution under Section 86 of the Local Government Act, 1929, for the first fixed grant period. This general Exchequer contribution was distributed among local authorities in accordance with the provisions of the Act, the share of each local authority being applicable in aid of local government expenses generally, and no portion was assigned to any specific service.

On March 19th Mr. CHARLES TAYLOR inquired whether, in view of the magnitude of maternal mortality figures, the existing arrangements were adequate for ensuring that the Ministry's recommendations were carried out. Sir KINGSLEY WOOD replied that they were. Mr. TAYLOR then asked whether the Minister would appoint a full-time liaison officer for this purpose. Sir KINGSLEY said a number of the medical officers of the Department were engaged on a special inquiry in the areas with high rates of maternal mortality. These officers, with other members of the staff, advised as might be necessary the local authorities, with whom rested the responsibility of carrying out recommendations made by the Ministry. He did not think there was any necessity to make the additional appointment suggested by Mr. Taylor. On the same day Sir Kingsley Wood told Mr. George Griffiths that the totals of deaths in childbirth and deaths arising out of childbirth in 1935 were not available.

Consolidating Measures

Four consolidating measures were introduced into the House of Lords last week—namely: the Housing Bill, the National Health Insurance Bill, the Old Age Pensions Bill, and the Widows', Orphans', and Old Age Contributory Pensions Bill. All four are consolidation pure and simple, and do not make the slightest change in the existing law on the respective subjects with which they deal. The National Health Insurance Bill comprises the whole of the existing law with regard to national health insurance, which is now contained in seventeen United Kingdom Acts and Orders and eighteen Acts or Orders in Northern Ireland, beginning, in the case of Great Britain, with the original Act of 1911 and ending with the Act of 1935.

Local Government and Public Health

The law relating to local government and public health is so complicated that a special committee was appointed in 1930 to consider consolidation with such amendments as should be found desirable for facilitating consolidation and securing simplicity, unity, and conciseness. The Local Government Bill, 1933, was based upon this committee's first report, and achieved co-ordination and clarification in a complex branch of the law. The Committee's second interim report was presented in January; it dealt with public health law, and was accompanied by a Draft Bill consolidating a large portion of the enactments relating to that subject. A Bill based on this Draft Bill is expected during the present session.

In the House of Lords, on March 24th, Viscount GAGE introduced a Bill to consolidate and amend certain enactments relating to public health, and it was read a first time.

Employers' Liability Bill

Mr. MAINWARING moved, on March 20th, the second reading of the Employers' Liability Bill, which sought to attach directly to the employer or employers responsibility for injuries caused to workmen by the negligence of other workmen. He said that as the law stood an employer was liable for wrongful or negligent acts committed by any of his employees only so far as the results of the accident affected any member of the general public. The Attorney-General said a passenger had to prove negligence to get any damages. An employee got compensation whether there had been negligence or not.

The Bill was rejected by 146 to 85.

Surplus Foodstuffs: Experiments in Subsidizing Consumers

Mr. BALDWIN, on March 23rd, told Mr. Johnston that he was aware of recent experiments in this country and in Ireland in subsidizing needy consumers so that they had been enabled to eat surpluses of meat, milk, and potatoes off the market. A scheme for the disposal of surplus potatoes at cheap rates to the unemployed was carried out by the Potato Marketing Board at Bishop Auckland last year. The Board did not intend to conduct a further experiment this season, when the home crop was in short supply. In the case of milk and potatoes the schemes had been operated

by or through organizations of producers. The practicability of comparable action with regard to meat must largely depend on developments in the organization of live stock and meat marketing. Mr. JOHNSTON asked whether, in view of the report of the experts in this country, of the urgency of the problem, and of the success of these experiments, the Prime Minister would use his influence with the appropriate Ministers in order that schemes might be prepared. Mr. BALDWIN said that the Government was examining these reports with the utmost care.

Working Conditions of Ship Stokers.—Lord STANLEY said, on March 11th, that no special inquiry was considered necessary into the improvement of the conditions under which Navy stokers worked in order to reduce the risk to their health. Constant consideration was given to improving the conditions under which naval personnel worked and lived. Mr. THURTLE, who asked for this special inquiry, asserted that a considerable number of stokers had been discharged from the Royal Navy in recent years on account of diseases of the chest.

Committee on Temperature in Buildings.—Mr. S. F. MARKHAM asked, on March 13th, whether any inquiry was proceeding in this country at the moment into the question of temperature and humidity conditions in schools and hospitals. Sir KINGSLEY WOOD, in reply, said inquiries relating to questions of warmth and comfort in buildings were being carried out by an Interdepartmental Committee of the Medical Research Council and the Department of Scientific and Industrial Research. A further report would shortly be issued by the Council. In these circumstances he did not think it necessary to institute further inquiries with special reference to schools or hospitals.

Employment in Mines of Boys under 16.—Captain CROOKSHANK told Mr. Creech Jones, on March 17th, that he was aware that certain individuals were of opinion that it was undesirable for boys under 16 to be employed below ground in mines, and that such employment should be discontinued. He had, however, received no official representations from either side in the industry on the subject. He did not propose to institute an inquiry into it.

Special School Accommodation for the Mentally Deficient.—Replying to Sir Francis Fremantle on March 19th, Mr. OLIVER STANLEY said accommodation was available in special schools for 16,562 mentally deficient children compared with accommodation for 11,854 in 1911. He had in a recent circular pointed out the need for better residential accommodation for these children in certain areas, and had urged local authorities to make progress in the matter. Provision was made in Article 4 of the Mental Deficiency (Notification of Children) Regulations for the notification of mentally defective children due to leave special schools on or before attaining the age of 16. There was no power whereby local education authorities could notify children leaving other schools, but the Board had suggested that such children could be informally brought to the notice of the mental deficiency authorities for friendly supervision on a voluntary basis. Sir FRANCIS FREMANTLE said the general information was that this was not carried out. Mr. STANLEY said closer co-operation was now under consideration by the local authorities.

Superannuation of Local Government Officers.—Mr. Will Thorne was informed by Sir KINGSLEY WOOD, on March 18th, that resolutions or agreements putting the Local Government and other Officers Superannuation Act, 1922, into operation had been approved in the case of 1,079 local authorities. The number of officers and servants now subject to the provisions of the Act of 1922 was believed to be approximately 270,000. He hoped to introduce amending legislation next session, and proposed to discuss later with representatives of the interested parties the scope and details of this measure, which Mr. Will Thorne had suggested should make the Act of 1922 obligatory on all authorities.

Acute Small-pox Epidemic in Bengal.—Mr. BUTLER, replying on March 23rd to Mr. Leach, said that there had recently been an acute epidemic of small-pox in Bengal. Up-to-date figures for the province as a whole were not yet available, but in Calcutta 1,558 deaths from small-pox had occurred this year up to March 7th. This was greater than the average of recent years, but the disease came in waves at irregular intervals. Miss WILKINSON asked whether, in view of the increased death rate from small-pox, greater precautions could be taken in the native quarters. Mr. BUTLER replied that the local authorities had complete responsibility in that matter, and he thought they were fully alive to the need of taking all possible precautions.

In-patient Treatment of ex-Service Men.—On March 23rd Mr. R. S. HUDSON informed Mr. Silverman that the number of ex-Service men who had had in-patient treatment, excluding treatment in public mental hospitals, during the twelve months to date was approximately 9,000. Many cases were under treatment for short periods only, and the number of in-patients on any one day was about 2,400.

Experiments on Animals.—Mr. GROVES, on March 23rd, asked the Home Secretary if he was aware that for 1934 665,362 animals were vivisected without any anaesthetic; that many eminent orthodox physicians opposed such practices; and whether he would ensure in future that no such practice was continued without licence and compulsory anaesthetic. Mr. GEOFFREY LLOYD replied that the Cruelty to Animals Act of 1876, Section 3, proviso (2), permitted experiments being performed on living animals without anaesthetics by the holder of a licence under the Act where a special certificate was given that insensibility could not be produced without necessarily frustrating the object of such experiments. Such a certificate was given by the scientific authorities named in Section 11 of the Act. The Home Secretary could not undertake to issue any instructions which would not be in conformity with the provisions of the Act. Mr. Lloyd also informed Mr. Groves that the Home Office did not now keep records of the number of experiments performed on each class of animal. Information was not available on the number of vivisectional experiments conducted in the United Kingdom in 1934 on various animals.

Progress in Provision of Pithead Baths.—On March 24th Captain CROOKSHANK informed Mr. David Adams that the number of completed installations of pithead baths provided wholly or partly out of the Miners' Welfare Fund up to the end of 1935 was 188. These afforded accommodation for 238,634 men and 366 women. There were three districts in which there were not yet any pithead bath schemes.

Machine-mining Inquiry.—On March 24th Captain CROOKSHANK, replying to Mr. E. Williams, said that a general review of the problem of loss of life on the coal face due to machine mining had now been begun by the Royal Commission on Safety in Mines. The question of mitigating noise had been taken up with the manufacturers of coal-face machinery.

Puerperal Pyrexia in Derbyshire Institution.—Mr. SHAKESPEARE, on March 24th, told Mr. Holland that thirteen cases of puerperal fever were notified in Derbyshire during the thirteen weeks ended March 14th. One case occurred in one of the maternity institutions provided or subsidized by local authorities. There were eleven cases of puerperal pyrexia in the same institution during that period. Investigation showed that the source of infection could probably be traced to a throat infection in a member of the staff, and the institution was temporarily closed and the premises disinfected.

Cerebro-spinal Fever in the Army.—On March 24th Mr. DUFF COOPER said that the number of cases of cerebro-spinal fever in the Army at home during 1935 were: Aldershot, 7; Catterick, 2; various stations throughout Great Britain, 14; making a total of 23. The number of cases from January 1st, 1936, to date were: Aldershot, 1; Catterick, 4. In addition there were 7 cases at Woolwich, 2 at Chatham, and 1 at Windsor, making a total of 15.

Notes in Brief

Sir John Simon is aware of the serious accidents which occur through setting light to one or other of the celluloid articles in common use, but he points out that the sale of these articles could not be stopped without legislation.

Medical News

The House of the British Medical Association, including the Library, will be closed for the Easter holiday from 6 p.m. on Thursday, April 9th, until 9 a.m. on Tuesday, April 14th (Library 10 a.m.).

The annual general meeting of the Hunterian Society will be held at Simpson's Restaurant, Cheapside, E.C., on Monday, April 6th, at 7.15 p.m. After the formal business Dr. F. Howard Humphris will give a short address, illustrated by a film, on "Mild Radium Therapy."

The annual meeting of the Society for the Study of Inebriety will be held at 11, Chandos Street, W., on Tuesday, April 21st, at 4 p.m., when, after the election of officers, etc., Dr. J. D. Rolleston will read a paper "On Snuff Taking."

The Anti-Noise League, 66, Victoria Street, S.W.1, will hold a luncheon meeting on Monday next, March 30th, at 1 p.m., in the Whitehall Rooms, Whitehall Place, S.W. The occasion is intended to mark the first quarterly issue of *Quiet*. Lord Horder will preside, and the speaker will be Mr. Clough Williams-Ellis.

The Fellowship of Medicine announces that a demonstration on the fundus oculi for M.R.C.P. candidates will be given at the West End Hospital for Nervous Diseases, Gloucester Gate, N.W., on March 31st, at 8.30 p.m. Dr. Reginald Lightwood will give lectures on children's diseases at the National Temperance Hospital, at 8.30 p.m., on April 1st and 3rd. A week-end course in general medicine and surgery will be given at the National Temperance Hospital on April 4th and 5th. Courses in April include infants' diseases, at the Infants Hospital, March 30th to April 4th; proctology at St. Mark's Hospital, April 20th to 25th; ophthalmology at Royal Eye Hospital, April 20th to May 1st; medicine, surgery, and gynaecology at Royal Waterloo Hospital, April 27th to May 9th; psychological medicine at Maudsley Hospital, April 27th to May 30th; and a week-end course in diseases of the heart and lungs at Victoria Park Hospital, April 18th and 19th. Courses are open only to members and associates of the Fellowship of Medicine, 1, Wimpole Street, W.

The second International Congress of Roman Catholic Doctors will be held in Vienna from May 28th to June 2nd, when the subjects for discussion will be eugenics, sterilization, and missionary work. Particulars may be had from the Oesterreichisches Verkehrsbureau, Friedrichstrasse 7, Vienna.

The fifty-seventh post-graduate course of the Vienna Medical Faculty will be held from May 4th to 16th, the subject being advances in treatment of internal diseases.

Two Sir Milsom Rees scholarships for sons of medical practitioners of £100 each to Port Regis Preparatory School, Broadstairs, have been awarded to E. H. B. Smith, son of Major E. C. A. Smith; and to J. M. H. Dickson, son of Dr. W. S. Dickson.

Dr. Charles E. Goddard, O.B.E., medical officer of health for Wembley, is retiring in June. Dr. Goddard was appointed part-time medical officer of health for Wembley in June, 1895, and he held that position until two years ago, when he became a full-time officer on the district amalgamating with Kingsbury. Dr. Goddard was chairman of the Harrow Division of the British Medical Association in 1922-3, and again in 1932-3.

After allowing for a number of bequests the residue of the property of the late Mr. W. H. Hydes of Pontefract, who left estate of the gross value of £79,248, with net personalty £47,865, goes to provide for a maternity or children's hospital, to be known as the Hydes Hospital, with a direction that the governing body should be the same as that of the Pontefract General Infirmary. If the hospital should not be established within five years, then he left the residue of his property as to one-third each to the Pontefract General Infirmary, the Castleford Cottage Hospital, and St. Dunstan's.

The issue of the *Journal of the American Medical Association* for February 22nd is a radiological number.

Dr. Archibald Guelph Holdsworth Smart, M.B.E., has been appointed a Nominated Official Member of the Legislative Council of the Island of Saint Vincent.

Dr. Joseph Baird Albury has been appointed a member of the Legislative Council of the Bahama Islands.

In view of the approaching elections in Germany it has been necessary to postpone the meetings of medical societies in Wiesbaden, and these will now be held from April 18th to 25th. Fresh bookings are necessary in respect of residential accommodation. The German Society of Internal Medicine will meet from April 20th to 23rd, and the Röntgen Society from April 23rd to 25th, all dates inclusive.

Dr. G. Roche Lynch has been elected president of the Society of Public Analysts for 1936.

Dr. Alexis Carrel of the Rockefeller Institute, New York, has been nominated professor at the University of California at Berkeley, and Dr. Reginald Fitz, professor of medicine at Harvard and director of the Institute of Clinical Research and Preventive Medicine at the Massachusetts Hospital in Boston.

The Paul Ehrlich medal has been awarded to Professor Enrique Paschen of Hamburg for his researches on smallpox and vaccinia.

Dr. Ernest Renaux, who was for many years assistant to Professor Jules Bordet, has been nominated his successor in the chair of bacteriology at Brussels University.

Professor Gregorio Marañon, president of the Spanish Academy of Medicine, has been elected president of the Hispano-Belgian Scientific Entente Committee.

A museum of the history of pharmacy and drugs, with a library containing half a million volumes, has recently been opened at Moscow.

Professor Dante de Blasi of the Italian Academy has recently been nominated director of the new Health Institute at Rome.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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QUERIES AND ANSWERS

Intrapleural Ultra-violet Rays

"R.M.O." writes: Dr. M. O. Mistal of Montana published a paper in *Le Scalpel* on November 3rd, 1934, on the intrapleural treatment of secondarily infected empyema with ultra-violet rays. I should be grateful if anyone could direct me to a colleague who is in possession of the apparatus therein described and has personal experiences of its useful-

Sir Roger Tichborne's Deformity

Dr. W. F. LLOYD (Windsor) writes: Could any reader inform me as to the nature of the physical deformity which caused Sir Roger Tichborne to be brought up as a girl in early life.

Juvenile Asthma

Dr. A. A. MACMANUS (375, London Road, Glasgow) asks if any reader knows of a reliable nursing home, within easy access of Glasgow, where an asthmatic boy of 7 years might be treated with a fair chance of cure.

"Verrucae"

"M.D., D.P.H." writes: For some weeks all sorts of remedies—more or less complicated and laborious—have been advised for this common condition. I write because no one has mentioned a very simple cure—perhaps too simple for some of us—namely, daily lathering of the affected parts with fels-naphtha soap. After hearing of it I tried it first on my own son, whose hands were covered with small warts, and have now used it successfully for years. I have tried it, doubtfully, but out of curiosity, on very large warts, and have been surprised at its success. It would be interesting to know the active constituent of this soap.

Stammering

Mr. H. ST. JOHN RUMSEY, M.A., Instructor for Speech Defects at Guy's Hospital, writes: "Cured Stammerer," writing in answer to "Old October" (March 14th, p. 566), makes a very good point when he says that the chance of a cure depends upon the stammerer's own wish to correct his stammer; but he is surely at fault when he says that stammering is not a speech defect because, he says, that stammerers can speak normally. Actually, there are very few stammerers who ever speak normally; nearly all of them speak at an abnormal speed, and the outstanding characteristic of their speech is that it is staccato instead of the normal smooth speech. To describe stammering as "a symptom of a general condition which is of the nature of an inferiority complex" seems no more logical than to describe the inability of a "slogger" to make consistent cricket scores as due to the same complex. The slogger will need to correct his technique and to play a straight ball with a straight bat. Similarly the stammerer should study the technique of speech and learn to speak at a normal speed with good rhythm and an even flow of vowel sounds, all of which he does when he sings, and thus gains fluency. "Cured Stammerer" goes on to advocate the teaching of elocution to all speakers; here again I am in agreement if he means the teaching of voice production and rhythm, but if he means the exaggerated consonant type of speech so often taught I can assure him that a stammerer who has been taught to stress his consonants is nearly incurable. The stammerer thinks chiefly of the consonants, and until he has learned to think chiefly of the vowels (as he does in singing, reading poetry, and in mime) he will not be any more consistent in his speech than the slogger is with his runs. "Exsta," writing in the *Journal* of March 21st p. 624), condemns the speech exercises used in many of the London hospitals and by the L.C.C. on these grounds: "The theory behind these exercises is that the patient doesn't know how to speak. This is absurd, because the patient will not stammer if he speaks when no one is present." "Exsta" means one thing, but has said another. The patient can speak when he is alone, but he has no idea how he speaks, and it is "how he speaks" that the speech training teaches him. The same applies to any game; any normal athlete can do a hole in "bogey," but it is the study of the technique of golf, not psycho-analysis, that makes the average athlete into a scratch golfer. I cured my own stammer by the study of voice production, and am convinced that the same method will cure anyone else who will take the trouble to learn the factors which are combined in well-balanced speech.

Chromidrosis

BM/CLMH writes: I have noticed with interest that there has so far been only one attempt to solve the problem propounded by Dr. Gibb on February 29th (p. 455). As a sufferer myself perhaps I may be of some assistance. Dr. Gibb has chosen a problem which the standard books seem to ignore. Savill barely mentions the subject, and certainly does not note the staining of clothing, but he does remark that the condition is closely related to hyperidrosis and bromidrosis. Gray, in Price's textbook, says very little more. Personally I have often considered investigating the problem, not only for my own satisfaction but for that of patients. I find that in such cases there is always an excess of sweat, and that certain of the axillary hairs have an encrustation which is more or less orange in colour. These hairs smell far more than their fellows. The material stuck to the hairs I believe to be a mixture of debris and specific organisms; I have no proof so far. The question of treatment I have found resolves itself into three phases. First, to reduce the amount of sweat. To this end, light cotton underclothing of the cellular type, without sleeves, should be worn, wool being entirely unsuitable. This increases the loss of sweat from the axilla. Locally one may try 1 per cent. formaldehyde, but it is unpleasant, and not devoid of danger from dermatitis, as I have found. *X* rays are advocated, but should not be employed except as a last resource. Secondly, to keep the parts clean. Sometimes warm baths twice a day are not sufficient to secure absolute freedom from smell and staining. The last indication is to remove so far as possible the breeding-ground for the organisms which I believe to be the cause of the trouble. This is done by keeping the axilla shaved. Briefly, then, I would advise light, airy underclothing, very frequent warm baths, and shaving of the axilla. Within limits the condition appears to be progressive, but with care can be controlled so that life is not a misery for the sufferer or an offence to his neighbours.

Income Tax

Expenses of Appointment—Subscriptions

"S" desires some further explanation on the question answered briefly in our issue of February 29th.

⁂ The statutory rule restricts the allowance to expenses incurred "wholly, exclusively, and necessarily in the performance of the duties of the office." In the case of Simpson *v.* Tate Mr. Justice Rowlatt said "the office-holder is obliged to qualify for his office . . . and then he is allowed the expense of performing it. . . . I think that all subscriptions to professional societies . . . and all that sort of expense which enables a man to keep fit for what he is doing are things which can none of them be allowed." It will be seen that under that ruling a lot of expenditure which may be said to be conventionally necessary is regarded as not incurred "in the performance of the duties," and it therefore cannot be successfully contended that because an office-holder considers certain expenses incumbent upon him they can be deducted for income tax purposes.

Assistant becomes Partner

"J. M." was an assistant in a practice for seven months to December 31st, 1935, receiving a salary and free quarters. He then purchased a quarter share in the practice. Income tax returns have been made on the cash basis, the firm's year ending on March 31st each year. How should his return be made for 1936–7?

⁂ As our correspondent's emoluments as an assistant were an expense of carrying on the practice up to December 31st, 1935, it will not pay the new firm to require the practice as having been terminated and restarted at January 1st, 1936—because there would be no corresponding deduction in 1936. Tax is due on the amount of income earned whether received or not, and as the gross income of the practice is apparently fairly steady, it is not advisable to depart from the cash basis. "J. M." should therefore return one-quarter of the net cash profits of the practice for the year to March 31st, 1935, treating his emoluments for the seven months to December 31st, 1935, as legitimate expenses of the practice.

Replacement of Car

"S. T." has been in practice since January 1st, 1934. At first a car was used which had been owned since June 27th, 1932, cost £185, but that car was sold on May 26th, 1935, for £65, when a "V." car was bought for £225. No depreciation has been claimed.

⁂ We suggest that depreciation should now be claimed for past and current years. On the basis of 20 per cent. the written-down value of the car was £134 when it began to be used for the practice at January 1st, 1934. The allowances to be claimed are:

Quarter to April 5th, 1934	...	£8
Year to April 5th, 1935	...	£28
Year to April 5th, 1936	...	£22

This leaves the written-down value at £76, and as the car was sold for £65 an absolescence claim can be made—that is, charged as an expense of the year 1935, on the difference—that is, £11. The depreciation allowance for 1936–7 will be £225 at 22 per cent.—that is, £50.

Subscriptions—Literary Earnings

"X. Y." has held an appointment under a Government Department since April, 1935. Can he deduct as expenses subscriptions to medical societies and post-graduate lectures? Prior to taking up the appointment he wrote for a professional journal, his receipts from that source being: 1933–4, £82; 1934–5, £83; 1935–6, £14. The two latter years have been, or will be, assessed on the basis of the actual year's receipts. What is the position as regards 1933–4?

⁂ The first point is covered by a decision of Mr. Justice Rowlatt in the case of Simpson *v.* Tate, the effect of which is that "X. Y." cannot claim the subscriptions as expenses unless he is required to belong to the societies by the terms of his appointment under the Ministry. As regards the second question, the £82 is assessable for 1933–4 whether the income is assessable under Case I as professional earnings or under Case VI as miscellaneous profits. The point is that when an income-bearing source comes into operation the first year's income is assessable on the amount of income of the actual year.

Motor Car Allowance

"ANTHROPOS" bought a new car in 1928 for £350. Depreciation allowance was given annually, reducing the written-down value after deducting the allowances to 1935–6 inclusive to £103. In 1935 he sold it for £25 and bought a new car for £240. What should he claim?

⁂ (*a*) Obsolescence allowance—that is, £103 − £25 = £78—to be treated as if it were an actual expense of the year 1935, and (*b*) depreciation allowance for 1936–7 of £240 at 22 per cent. = £53. In each case the allowance is subject to the deduction of one-twelfth the agreed proportion for private use.

LETTERS, NOTES, ETC.

"Dialectical Materialism"

Dr. S. LEFF (London, N.19) writes with reference to the letter from Dr. Frederick Dillon: I would remark that people do not differ in the fundamental principles of dialectical materialism but only in the application thereof. I do not think it is possible to apply dialectical materialism to any specific aspect of medicine, such as clinical psychology, but it is, however, of fundamental importance for every scientist to have a thorough knowledge and understanding of the principles. Dialectical materialism is an all-embracing philosophy which not only has taken its place as the only logical social science—as evidenced by the modern trends and developments of society—but has also a profound significance in the development of other sciences. The approach of the research worker to his particular subject is naturally of great importance. The physicist or biologist who is an idealist almost invariably comes into conflict in his general conclusions with the physicist or biologist who is a materialist. Manifestly the taking up of a correct standpoint in philosophy of necessity aids one's approach to any problem in research work. The dialectical materialist, therefore, usually finds himself at an advantage in comparison with the research worker who has no general philosophy, or who adheres to the popular but erroneous ones. Similarly—though it may seem far-fetched—a doctor in his approach to his patients, and especially the psychological misfits, is at an advantage, because as a dialectical materialist he has the knowledge of the position of medicine as a science in relation to other sciences, and also of the individual in his relation to society.

Dr. W. J. LOGIE (Falkirk) writes: The source of the two "principles" of Soviet medicine referred to by Dr. Dillon is easily found. Marx, who never invented anything, "lifted" his philosophy from Hegel, and any student of the *Science of Logic* could enlighten Dr. Dillon as to what the principles really mean. The *Science of Logic* is more intelligible in German, but excellent English translations exist. The Soviet application seems rather schoolboyish.

Iodoform

Dr. D. LEONARD LEES (Brecon) writes: May I be permitted to extol the virtues of iodoform as one of the best agents for the prevention of sepsis in wounds occurring under conditions not surgically clean. I have been using it as a routine in all such wounds for the last twelve years and can recall only one case where healing by first intention did not occur, and this was a lacerated wound badly contaminated by road dirt. Recently I have sutured wounds which I would not have dared to do a few years ago when using the time-honoured iodine as an antiseptic. Another advantage of iodoform is the fact that it is painless. I would commend its inclusion in all first-aid outfits to the exclusion of iodine, and suggest that its merits be investigated by those who direct first-aid instruction, as I am convinced that it is far superior to that agent, now generally used.

Electrotherapy in 1784

Dr. VAUGHAN PENDRED (East Sheen) writes: This surely must be one of the earliest of the therapeutic applications of electricity to the human body on record. An antiquarian who is at work on the antiquities of Pulborough, Sussex, discovered the item in the churchwarden's account book for the year 1784: "Mr. Taylor's Bill for Electricity performed on Wm. White, 9s. 6d." The earliest book on electricity, *De magnete*, was published by Dr. Gilbert of Colchester at the end of Queen Elizabeth's reign (1600), so that nearly two centuries had elapsed before this treatment was applied to William White. Clearly it must have been well established 150 years ago or the churchwardens would never have paid such a sum, considerable in 1784, for the treatment of a pauper. May I ask the electrotherapists to tell us more of the history of their craft.

Pediculosis Capitis in a Factory

"T. D. C." writes: I treat this trouble with a solution of carbolic, 1 in 20. Cover the eyes so that none of the solution gets in them, wet the hair and scalp, and the head may then be washed, for the vermin are killed as soon as they touch the carbolic solution. A powder impregnated with carbolic may be put down the neck of the child, between the skin and the clothing, and that, with the warmth of the body, kills the insects and the odour prevents reinfection of the clothing.

Disclaimers

Mr. S. G. BROWNE, F.R.C.S. (London, S.E.14) writes: My attention has been drawn to several paragraphs which have appeared in the Press recently, giving highly coloured accounts of my career. I presume that the facts were drawn from an official report of a public body whose scholarship I held as a student. The inferences must be the result of journalistic imagination, since neither I nor the members of my family have at any time given interviews to pressmen.

Mr. W. H. SUMMERSKILL (London, W.) writes: I beg to disclaim any responsibility for a reference in the lay Press to my work on the treatment of strabismus. The information was obtained from my article "A Non-operative Treatment of Squint," published recently in a medical journal. When telephoned, I refused to be interviewed or to give any explanation on the subject.

Dr. STANLEY J. HARTFALL and Dr. HUGH G. GARLAND write: During the past week there has been renewed publicity in the Press with regard to the gold treatment of rheumatoid arthritis, and our names have been associated with most of the articles. We discover that the Press had been circulated by a news agency, and paragraphs were transposed from a short article which we published in the last number of the *Leeds Medical Society Magazine*. We wish to disclaim all association with this publicity, of which we had no knowledge prior to its appearance.

Corrigendum

In our note on *The Fight Against Disease* (March 14th, p. 538) the estimate of "£600,000 a year" was erroneous. This sum represents the amount contributed since 1912 for anti-vivisection propaganda.

The British Drug Houses (Graham Street, City Road, London, N.1) have just published a booklet in reference to gonan, the gonadotropic hormone, and the hormones of the ovary, oestroform, oestroform "B," and progestin. The introductory chapter gives a brief outline of the role of the different hormones during the stages of the menstrual cycle. A free copy will be sent to any reader who applies to the address given above.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 52, 53, 54, 55, 56, 57, and 61 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 58 and 59.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 127.